Sir Andrew N. Agnew
of LOCHNAW, Bart.

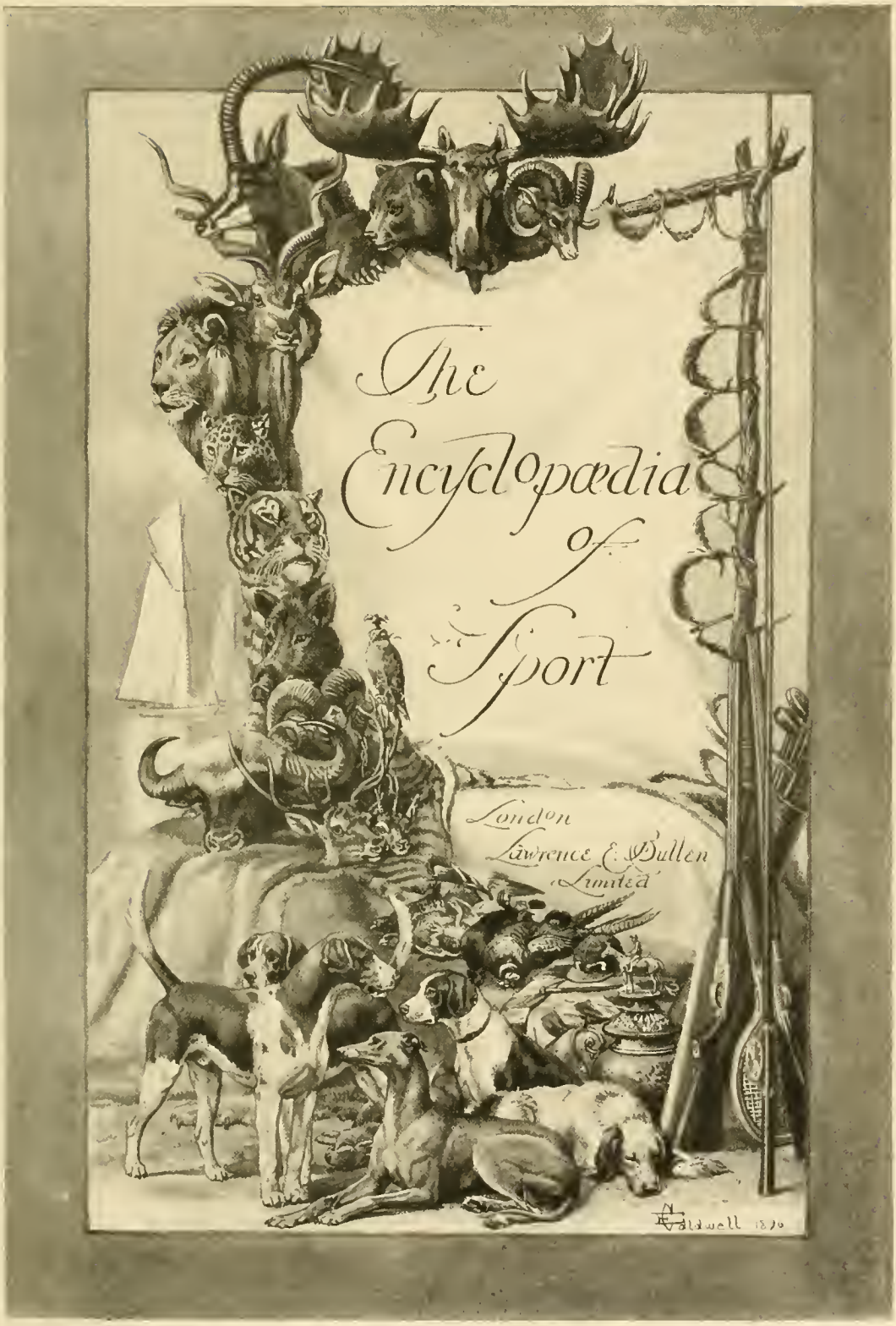
JOHN A. SEAVERNS

THE

ENCYCLOPÆDIA OF SPORT

Drawn by T. Thorburn — Swan Electric Engraving Co

The first far-away echo


The
Encyclopædia
of
Sport
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THE

ENCYCLOPÆDIA

OF

SPORT

EDITED BY

THE EARL OF SUFFOLK AND BERKSHIRE

HEDLEY PEEK

AND

F. G. AFLALO

VOL. I

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PREFACE

LOVERS of Sport cannot complain that in recent years their interests have been neglected by English publishers; but, although books devoted to the consideration of Sport continue to multiply apace, no serious effort has been made to produce a national Encyclopædia of Sport.

Many editions of Blaine's *Encyclopædia of Rural Sports*, which first appeared in 1840, were published down to 1870. Blaine announced that he proposed to describe "the progress of each sport to its present state of perfection," and he acquitted himself creditably. The book was very useful in its day, but its day is past.

Football was so slightly regarded when Blaine's work appeared that he actually makes no mention of a game which is now among the most popular of our recreations. Some sports, Cricket for example, have been completely revolutionised during the last fifty years; and others, Badger-baiting and the like, described by Blaine, have disappeared from the catalogue of national amusements, and are here relegated to the article on Obsolete Sport.

Blaine's predecessor, Strutt, published in 1801 *The Sports and Pastimes of the People of England*, which was frequently reprinted. This valuable and entertaining book, a mine of antiquarian lore, has no pretension to the name of Encyclopædia, though Strutt pursues his investigations even to the chronicling of "the obsolete sports of the young," as deduced from old engravings. Among these obsolete sports one is surprised to find games resembling "Blind Man's Buff" and "Leapfrog"; though, as the latter is apparently being played by monks and nuns, the monks giving the back, Leapfrog in that particular form may fairly be reckoned among obsolete sports.

Strutt, and to a large extent Blaine, worked single-handed; but it is obvious that if an attempt is to be made to cover the whole range of sport, scores of experts must collaborate. The Editor is glad to say that, in answer to his appeal, the leading authorities on every branch of sport have placed their services at his disposal. In not a few cases, indeed, men who have never before published any portion of their complete and carefully acquired knowledge have been prevailed on to break through their habit of silence in favour of this work. Even the less important and unsigned articles have been submitted, to insure all possible accuracy of detail, to the careful revision and scrutiny of experts.

The scope of the present work is very wide, and includes many articles on subjects which, though not in themselves sport, are certainly its corollaries. Such are, for instance, "First Aid," "Taxidermy," and "Veterinary Work."

Of the first-named some knowledge should be in possession of all who take part in sport of any kind; for what sport worthy of the name is free from danger? It is not too much to say that very slight surgical skill on the part of a servant would have prevented a fatal termination to one of the most deplorable of recent accidents on the hill.

Of Taxidermy every big-game hunter, be his object science or sport, should have at least such elementary knowledge as shall insure the preservation of specimen or trophy in presentable condition. And of the perpetual use of Veterinary work there can be no need to remind sportsmen.

Nor has natural history been neglected, though made subservient to sport throughout.

The plan of publication in parts has been adopted in the confident expectation

that those who buy the earlier numbers will never rest satisfied without the complete series. The acquisition of a full-blown Encyclopædia is seldom undertaken without the misgiving born of a dread of satiety.

It may at all events be urged that this method of publication has the advantage of affording to well-wishers of Sport an opportunity of giving us the benefit of suggestions in time to correct errors or repair omissions in future numbers. Who can tell that we may not with such assistance expand in due time to the dimensions of the *Dictionary of National Biography!*

In these volumes, without any sacrifice of accuracy or technical detail, a lighter style than is usual in works of this description has been permitted, so as to render the monthly issue to the full as attractive as any of the most popular magazines. It will be allowed that the *menu* thus offered to the public is, at any rate, not lacking in variety.

The glossaries under each subject must be claimed as something of a new departure, though, of course, the facilities for reference must necessarily remain incomplete until the publication of the Index with the final number.

There are not nowadays many sports from the enjoyment of which women are excluded; but some are considered as peculiarly within their province; and for these, such as Cycling, Lawn-tennis, &c., the services of ladies have been secured.

All the Plates, and with few exceptions the text-cuts, have been specially executed (under the supervision of Mr. Hedley Peek) for this work, which, when it reaches completion, will be generally recognised as a needed and valuable addition to English Encyclopædic lore.

It remains to add that the founder and architect of the scheme developed in these volumes is Mr. F. G. Aflalo, who has devoted himself to his editorial task with unflagging energy.

SUFFOLK AND BERKSHIRE.

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VOL. I

THE ENCYCLOPÆDIA OF SPORT

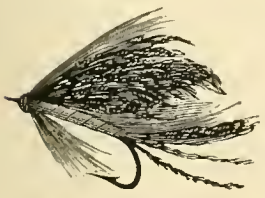
AARD-VAARK or EARTH HOG (*Orycteropus*)—A South African ant-eater of burrowing and nocturnal habits, of which three species are known. The flesh is said to taste strongly of formic acid, but is nevertheless much appreciated by the natives, who spear or hunt the animal with trained dogs. Strong iron traps are sometimes used.

AGOUTI (*Dasyprocta aguti*)—A small rodent of South America and the West Indies, which has done much damage on the sugar plantations. It is largely eaten by the natives, who beat the undergrowth lining the rivers and shoot from boats as the animals take to the water.

ALBICORE (*Lichia glauca*)—A large ocean-fish allied to the tunny and mackerels, which, from its habit of following for days in the wake of vessels, is much angled for with outrigger bamboo pole and log-line. The latter, reeved through a block, terminates in a fathom of wire rope and a single large hook dressed with two-feet strips of red and white bunting. A small bell is so arranged on a loop-line as to ring when a fish is hooked. This Albicore-fishing is, from the great strain, not successful at any speed over twelve knots.

ALEVIN—The earliest form of salmon-fry as it emerges from the egg with yolk-sac attached.

ALEXANDRA—A large and deadly artificial fly, dressed with silver body and peacock harl, and worked deep like a salmon-fly. It is used in various sizes for salmon, trout, grayling, &c. (No. 1 hook in Yorkshire for grayling), and is found to be especially killing on waters where a silver-bodied fly answers, though the fish soon tire of it.



ALEXANDRA.

It is prohibited on many fly-fishing club waters, as well as in many preserved lochs and chalk streams; but in Scotland and Norway its use, which has been aptly compared to a variation of minnow-fishing, is general.

ALLIGATOR—The name popularly applied to all the species of three genera of Saurians: (1) Alligator, (2) Caiman, (3) Jacare, found only in the New World.

They may always be distinguished from Crocodiles by the presence of a pit in the upper jaw which receives the long teeth of the lower, and by the fact that they have the hind feet webbed to a lesser degree.

Alligator-shooting is treated of under CROCODILE.

AMATEUR—As long as there have been national sports in England there have also been classes of men who have practised them for gain and as a means of livelihood; and these men have been usually termed **professionals**, although in one game, Cricket, the name **player** has always been in vogue. Professional jockeys, professional cricketers, watermen, and runners have been with us always; and in most sports there have been gentlemen of means who have taken part for amusement and not for gain, although they had no objection to ride, play, row or run for money-stakes or bets. This class were long described in contradistinction to the players or "**pros.**" as **gentlemen**, because they consisted entirely of men of gentle birth.

With the rapid popularisation, however, of all sports and games during the last fifty years, and especially in consequence of the introduction of "gate-money" into games, the old vague distinction, drawn between the gentleman who was the patron and the professional who was hired, became obsolete; and the votaries of different sports set to work to divide competitors into two classes, the **professionals** who competed for money, and the **amateurs** (a term borrowed originally from across the Channel) who declined to receive money either by way of remuneration or in the shape of a prize, but who pursued their sport solely for its own sake.

It would be tedious to trace the corruption of so called "amateurism" to its present state. It

is here only possible to give a *résumé* of its condition at the present day.

Athletics—Many of the leading amateurs must obviously make a living out of athletic sports, as they travel to distant parts of the country, and win prizes all over the kingdom, and are clearly not possessed of the means to pay for their own amusement.

Cricket—Most amateur cricketers are genuine amateurs, but there are some instances to the contrary of men who, without visible means of spending the entire summer in recreation, must obviously pay their way in life by what they receive under the guise of "expenses."

Cycling—Scores of the leading "amateur" cyclists are directly or indirectly paid by the manufacturers of cycles whose machines they ride, or receive enough for their "expenses" to keep themselves throughout the season.

Football—As soon as there were hundreds of pounds to be made by charging an admission to the ground, the players naturally wanted to share in this. In the *Association* Game, professionalism has been recognised, and there are professional clubs as well as amateur clubs, and competitions in which both play together. It is the custom for amateurs, however, to have their travelling expenses, and often their hotel bills, paid by their own clubs. In the *Rugby Union* Game, the authorities are still making a determined effort to allow no paid footballer to take part with the amateurs; in the provinces, however, scores of amateurs receive, directly or indirectly, remuneration for representing their clubs.

After considerable friction for many years between the Rugby Union authorities and some leading clubs in Yorkshire and Lancashire, there was at length an open rupture in 1895. At that date, a large number of the leading clubs in the two counties seceded from the Rugby Union and formed a Northern Rugby Union. This body comprises at least half, and by no means the least important half, of the clubs in the two great Northern shires. The ostensible reason for the rupture was that the Northern malcontents wished to pay their players for "broken time," that is, some equivalent for the wages they lose by taking part in matches; but most observers are of opinion that the rupture was really due to deeper causes of difference between the North and South.

The players who receive payment for broken time are at present in an anomalous position. They play as amateurs amongst amateur clubs, but are not recognised as amateurs by the Rugby Union, nor as amateur athletes by the Amateur Athletic Association.

Racing (including **Steeplechasing**)—There are many licensed **Gentlemen Riders.** Of these, some spend money on their amusement and are genuine amateurs; others have their expenses paid by the owners whose horses they ride. The latter proceeding is entirely illegitimate, and is usually hidden by some such device as giving the quasi-gentleman the result of an imaginary bet if he wins and of course claiming nothing from him if he loses.

Rowing—In this sport, the amateurs may be described as *genuine* amateurs; they pay for their own amusement. The causes of this are two-fold. Firstly, it is impossible to charge "gate-money" to see races on the rivers. In other sports, the promoters find that it pays them to lure the leading amateurs with bribes, because their appearance increases the "gate." Secondly, rowing at the leading regattas is barred to "mechanics, artisans, or labourers." In real fact, amateur rowing in England is, from the nature of the sport, confined to those who have some means. With athletics, cycling, and football, it is impossible to preserve this distinction. The money for the sport is found by the public, who look on and pay their shillings at the gate. The public wants to see the best men, not merely those who happen to be possessed of private means.

The usual form in which a modern "amateur" receives remuneration for his services is under the heading of "expenses." It is very forcibly contended that few men who play a game are in a position to give up their time and to travel about the country at their own expense; it is only fair, therefore, it is said, that a man who represents his club or county should have his travelling expenses, and even his hotel bills, paid. On the other hand, it is pointed out that if a man is throughout a season boarded and lodged at his club's expense, he is really making a living out of the game he is supposed to be playing for the love of sport; and it is also obvious that if a man is paid his "expenses," or so many pounds for his "expenses," he is well able to save a bit out of what is given to him. The problem is where to draw the line as to payment of expenses.

Another difficulty, which has to be considered, is that things which are no substantial reward to men of one class are so to those of another. If the University oarsmen have their boats and oars paid for by their club, and their hotel bills at Putney defrayed by the same means, it would be hard to say that by so doing they lose their right to be called amateurs; yet if a body of pitmen are boarded and lodged for a month at the seaside at the expense of their football club, the amateur footballer would call them "pros." and would point out that they are getting an excellent gratuitous holiday out of the sport they follow.

It is often asked what is the object of separating the two classes in sports. The answer given is—that to allow paid and trained exponents of a sport to compete against those who are working for their living, and training only in their leisure moments, is to suppress the latter class and to discourage the truest form of sport, that of honest recreation. It is also pointed out that when a sport gets entirely into the hands of

people whose only object is to make money out of it, the sport gets full of dishonesty and trickery, and the public at large, instead of taking part in it, do nothing but look on and bet, which is not so good for their bodies or their minds.

A distinguished Irish judge is reported to have been asked by a still more distinguished English statesman what was the solution of the Irish problem, and to have replied, "the Irish problem is just insoluble." It is difficult to give any other answer if one is asked for the correct solution of the *Amateur Question.*

MONTAGUE SHEARMAN.

["An amateur is one who has never competed for a money prize or staked bet, or with or against a professional for any prize, or who has never taught, pursued or assisted in the practice of athletic exercises as a means of obtaining a livelihood."—Rule 1, A.A.A.]

AMBULANCE—[*See* FIRST AID].

AMERICA CUP—The America Cup was first offered for racing in 1851 by the Royal Yacht Squadron, under the name of the "Queen's Cup." The course assigned was round the Isle of Wight, and the victory was won by the United States boat *America*, a schooner. In 1857 it was given by the five owners of the winning boat to the New York Yacht Club, to be held by them against all challengers as an international trophy. In 1870 and 1871 England sent over boats which were defeated. In the first year the *Cambria* came in eighth, amongst twenty-three competitors; in the second the *Livonia* sailed five races against two different boats representing the N.Y.Y.C., and lost four. Canadian boats made unsuccessful attempts to win it in 1876 and in 1881.

Since that date England has made unsuccessful attempts to bring the cup back in 1885, 1886, 1887, 1893, and 1895. [*See also* YACHTING.]

The laws under which the yachts run are subject to constant revision, but two conditions are permanent: the visiting yacht must be built in the country that challenges, and the race must be sailed in the waters of the country holding the cup.

RECORDS OF THE RACE.

	Yacht.	*Rig.*	*Owner.*	*No. of victories.*
1870	MAGIC (winner)	Schooner	Mr. F. Osgood	1
	Cambria	,,	Mr. J. Ashbury.	
1871	COLUMBIA, SAPPHO * (winners)	,,	Mr. F. Osgood	2
			Mr. W. P. Douglas	2
	Livonia	,,	Mr J. Ashbury	1
1876	MADELINE (winner)	,,	Mr. J. Dickenson	2
	Countess of Dufferin	,,	Major C. Gifford.	
1881	MISCHIEF (winner)	Sloop	Mr. J. R. Bush	2
	Atalanta	,,	Capt. Cuthbert.	
1885	PURITAN (winner)	Cutter	Mr. J. W. Forbes	2
	Genesta	,,	Sir Richard Sutton.	
1886	MAYFLOWER (winner)	,,	Gen. C. J. Paine	2
	Galatea	,,	Lieut. Henn.	
1887	VOLUNTEER (winner)	,,	Gen. C. J. Paine	2
	Thistle	,,	Mr. James Bell.	
1893	VIGILANT (winner)	Cutter	Messrs O. C. Iselin and Morgan	3
	Valkyrie II.	,,	Earl of Dunraven.	
1895	DEFENDER (winner)	,,	Mr. O. C. Iselin	3
	Valkyrie III.	,,	Earl of Dunraven.	

* In this year the N.Y.Y.C. took the right of sending out what representative they chose on each day.

AMMUNITION—This subject may, for convenience sake, be divided into two parts: the first section dealing with the ammunition required for shot guns, whilst the second treats of that used with sporting rifles.

SHOT-GUN AMMUNITION.

Powders—In treating of ammunition, gunpowder naturally occupies the premier position. Black powder for shot guns, if not indeed already obsolete, probably will soon be entirely superseded by the more modern forms of explosive, except perhaps in very hot climates, and there is therefore no necessity to investigate that particular part of the subject. There are many well-tried smokeless powders on the market for the sportsman to choose from, and fresh ones are constantly being brought to his notice. The earliest form of smokeless powder was designed to occupy, power for power, the same space in the cartridge-case as did black powder. Powders of this type have done excellent work in their time, but they leave a good deal of solid residue after combustion, which, when shooting against wind, is frequently blown back into the eyes of the shooter. The newer form of concentrated powders are tolerably free from this defect, and most of them really deserve the application smokeless, which is more than can be said of the earlier kinds, and therefore they are gradually winning their way in public favour.

Nitric acid is the active agent in all smokeless powders at present in use. The principal absorbents are wood pulp, cotton wool, and glycerine. These substances, after treatment with the acid and combination with other ingredients, are so manipulated that the combustion is retarded to such extent as to insure that on explosion the pressure set up in the gun shall not exceed three tons per square inch, or about the pressure given by a full charge of black powder, which was taken as the standard of comparison. If it is desired to use smokeless powders in shot guns exceeding 10-bore, one of the primary types of powder first mentioned, which comprise Schultze, E.C., S.S. and Amberite, should be chosen for the reason that sufficient experience has not as yet been obtained to determine satisfactorily as to the action of the concentrated powders in guns of greater calibre.

Smokeless powder may be kept for any length of time without deterioration in a cool dry place, if the temperature is within from 40° to 60° Fahr. In cold weather better results will be obtained if the cartridges are kept in a warm room for a few hours before use, so as to bring their temperature up to about 60°.

Shot—The shot in general use varies in size from about 40 to 1,000 pellets to the ounce, as may be seen by reference to the table annexed :

Newcastle Chilled Shot Co.		Walker's, Parker & Co. London.	
Size.	No. of pellets per oz.	Size.	No. of pellets per oz.
Mould Shot.		*Mould Shot.*	
S G	8	L G	5½
S S G	11	M G	8½
S S S G	14	S G	11
		S S G	15
		S S S G	17
Drop Shot.		*Drop Shot.*	
A A A	40	A A	40
A A	48	A	50
A	56	B B	58
B B B B	56	B	75
B B B	64	1	82
B B	76	2	112
B	88	3	135
1	104	4	177
2	122	5	218
3	140	6	270
4	172	7	341
5	218	8	600
6	270	9	984
7	340	10	1720
8	450		
9	580		
10	850		

From the foregoing tables it will be gathered that in some sizes the number of pellets to the ounce varies considerably as between the two makers, and although the anomaly has often been pointed out no revision has as yet been effected.

There are two kinds of shot made ; "soft," which is composed of nearly pure lead, and the so-called "chilled," which is in reality an alloy, with lead as the principal ingredient. Chilled shot possesses many advantages over the soft kind, for, as its name implies, the pellets are harder, and for this reason they do not lose to so great an extent their spherical form in the cartridge or bore of the gun, and in consequence of this they keep a more correct line of flight. The pellets are formed by pouring the molten metal through a perforated plate fixed at the top of a high tower. The height of the drop gives time for the naturally-formed globules of metal to harden before falling into a tank of water, which is placed in the base of the tower to receive them. The larger sizes of shot are generally used for wild fowl, against the strong feathers and tough bodies of which they are very effective, often at ranges exceeding one hundred yards. The choice of size of shot is usually regulated by the size of the game and the distance at which it is to be killed. No. 6, of 270 pellets to the ounce, is the size most generally used for ordinary purposes of game shooting in England.

Cartridge Cases—For shot guns these are sometimes made of solid drawn brass ; but this more particularly applies to the larger sizes used for wild-fowling purposes. For guns of ordinary size, *i.e.*, 20 to 12-bore inclusive, paper cases are almost universally employed. The principal objection to brass cases is that the sharp edges are liable to cut the fingers of the shooter. Several improvements have been made recently in the paper used in the manufacture of cartridge cases, the most important of these being the "*Pegamoid*" process, which renders the paper waterproof.

Concentrated powders require a special form of cartridge case, having the interior of the base, that is to say the powder chamber, of a conical shape. These bases vary somewhat in form for the several powders, as also do the cap domes, which have one or more flash-holes of various sizes. The fulminate in the percussion cap is somewhat different in composition and in action from that required to ignite the older type of smokeless powder. A question of vital importance bearing on the action and behaviour of present-day explosives is the inequality of power of the percussion caps, many serious accidents having resulted from this cause. In some instances, owing to the small quantity of fulminate in the cap, the shot charge has been moved only a very short distance up the barrel and the next charge fired has burst the gun. An excess of fulminate in the cap gives rise to high gas pressure in the breech, which is likely to injure the weapon, and in any case irregularities of the sort indicated are a barrier to good and regular work.

Wadding—In the shot cartridge the wadding is a very important item, as it must fulfil several requirements. It must act as an effectual gas check, not only at the instant of explosion but also while the charge is passing from the cartridge into the bore of the barrel, thus effectually bridging over that part of the bore of the gun termed the "cone."

From numberless experiments it has been found that in a 12-bore a card wad of medium thickness over the powder, next which is a ⅜ in. soft felt with a grey cloth under the shot, gives the best results ; the wad over the shot only being sufficiently stout to keep the pellets from shaking loose during transit.

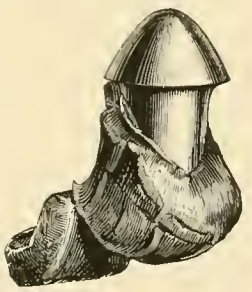
Rifle Ammunition.

Twenty years ago the subject of ammunition for sporting rifles was a very large one. At that period rifles were made by rule of thumb, no two being exactly alike, and as each maker had his own particular charge of powder, shape and weight of bullet, &c., the varieties of ammunition in use were innumerable. In the event of a bullet mould being lost or injured only the original maker of the rifle could supply a new one, so that the difficulties under which sportsmen laboured (especially in foreign countries) were considerable. This unsatisfactory state of affairs has for several years past ceased to exist, and rifles are now made to take ammunition of standard sizes, which can be obtained in all parts of the civilised world.

Powder—The remarks previously made with respect to the use of black powder in shot guns are applicable for the most part to the employment of this form of explosive in rifled arms, though it is still preferred for large bore rifles and modern ball guns of the "Paradox" type. Indeed, owing to the difficulty of obtaining a good smokeless powder abroad, the care with which it must be transported and kept, and the necessity of using a powder easy to load and invariable in its results, many big game shooters still rely on black powder only. But improvements in the manufacture of smokeless rifle powder make it unlikely that this will always be the case.

As stated in the previous section, smokeless powders are of two distinct varieties: first, those that, power for power, bulk the same, or nearly the same, as black powder—for example, S.R. powder, designed originally for rifles of the Martini-Henry class—and, second, those explosives of the concentrated type which occupy a much smaller space in the cartridge case. None of the powders of the former class really deserve the appellation smokeless; and they are all more or less hygroscopic On the other hand the majority of the concentrated powders are absolutely smokeless and impervious to damp, whilst the flame emitted from the muzzle of a rifle on firing a charge of one of these powders is scarcely perceptible. Concentrated powders may be divided into two classes; those that are composed almost entirely of nitro-cellulose or gun-cotton, and those that consist of nitro-cellulose combined with nitro-glycerine. Each of these has its own peculiar advantages and disadvantages which may be briefly summed up as follows:—Those powders containing nitro-glycerine give low and regular gas pressures, and for any given weight of charge the ballistic properties are excellent. The heat of combustion, however, is exceedingly high, and causes severe erosion of the bore, a matter of much importance in the case of a rifle, as the accuracy of shooting rapidly deteriorates in consequence. Powder of the nitro-cellulose class generally give higher and more irregular gas pressures; but the heat of combustion is comparatively low, therefore they do not so quickly destroy the interior of the rifle, and the barrel remains cooler during quick firing. As an example of the last-named class *Rifleite*, and of the former kind *Cordite* may be taken. *Ballistite* holds an intermediate position, as it is principally composed of nitro-cellulose with only a small percentage of nitro-glycerine. Two of the principal advantages accruing from the use of concentrated powders are (1) the great power that can be stored in a small cartridge case, and (2) the considerable reduction in recoil as compared with black powder.

Projectiles—Almost every sportsman holds a different opinion as to the kind of bullet that should be employed on big game. Some hold that a 4-bore elongated bullet weighing 1,880 grs., as propelled by 12 drs. of black powder, is the proper projectile to use. The muzzle velocity of such a bullet is about 1,330 feet per second, and the striking energy at short ranges about 7,000 foot pounds. Others are in favour of a 4-bore spherical bullet weighing 1,250 grs. This projectile when propelled by 12 drs. of black powder would have a muzzle velocity of about 1,460 feet per second, and a striking energy of nearly 6,000 foot pounds. Some sportsmen of experience consider that an 8-bore "Paradox" bullet is powerful enough for anything in the way of dangerous game, for at ordinary sporting range it gives such a smashing blow that the animal is killed or turned over at once: a consideration of much importance when an infuriated animal is charging. The 10-bore brass case "Paradox" is almost as powerful as the foregoing, for as it is practically a 9-bore, the projectile used is only slightly inferior in weight and smashing power, whilst the arm itself is considerably lighter. At the trial of an 8-bore "Paradox" ball and shot gun made by the editor of the *Field* some few years ago, six bullets were placed within a space measuring $1\frac{3}{8}$ in. by $2\frac{3}{16}$ in. the range being fifty yards. The charge used was 10 drs. of Curtis and Harvey's No. 6 grain powder and a hardened cylindro-conoidal bullet of 1,150 grains. The weight of this particular gun was 14 lb., and length of barrel 28 in.

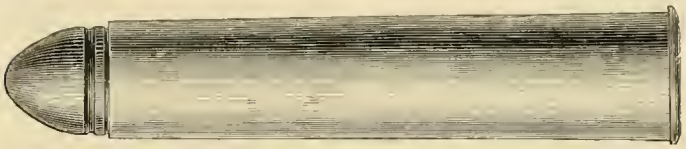


8-Bore Paradox Bullet. (Steel bullet coated with lead.) Cut out of an elephant.

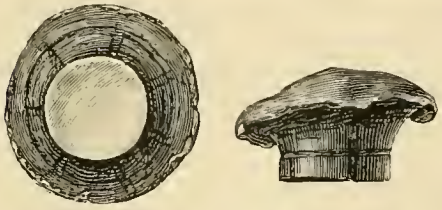
Some sportsmen prefer to have heavy bullets made with a hardened steel point so as to obtain great penetration; others choose a hollow-pointed bullet that will expand on striking, thus expending the whole of its energy in shock. The general consensus of opinion being that an 8-bore, or the No. 10 brass case bullet of the "Paradox" type of weapon is the most satisfactory projectile to use on dangerous game at any range within one hundred yards.

A ·577 bullet weighing 591 grains and propelled by 164 grains of black powder is largely used by those still preferring black powder. It is particularly suited for shooting the largest kinds of African deer, as well as lion, tiger, and giraffe, and even heavier game such as elephant, rhinoceros, buffalo and other Indian and African large game. The muzzle velocity of this bullet is about 1,660 feet per second, and the striking energy about 3,600 foot-pounds. The smaller ·500 bullet weighs 444 grs., and propelled by 138 grs. of powder it has a muzzle velocity of 1,780 feet per second, and a striking energy of 3,134 foot-pounds. A bullet of this

kind is suitable for smaller and less dangerous game than that before mentioned. Both the ·577 and the ·500 bullets are occasionally used



·577 CARTRIDGE.



·577 BULLETS. (Cut out of an elephant.)

with a copper envelope, which, by preventing deformation on striking, adds greatly to their penetrative power. A few years ago the ·450 and the ·400 "express" bullets were in great favour, but they are now being superseded by the ·303 Lee-Metford with a nickel envelope, and the ·256 Mannlicher with a steel envelope. These bullets on account of their extreme velocities possess enormous striking energies. For instance, the ·303 with a muzzle velocity of about 2,000 feet per second, has a striking energy of about 1,907 foot-pounds, although the bullet only weighs 215 grs. The ·256 Mannlicher bullet with a muzzle velocity of 2,456 feet per second has a striking energy of 2,070 foot-pounds with a bullet weighing only 155 grains. When these high speed bullets are made to expand on striking, they are very effective against deer and other game not requiring so very weighty a blow to kill them. Undoubtedly

·303 SPORTING CARTRIDGE.

·303 SPORTING BULLET. (Cut out of red deer.)

big game have been killed with projectiles of this class, but apart from the consideration of danger to the sportsman, the chief objection to their employment for the work is the fact that an immense amount of wounding must be done when shooting big game with very small bullets. Notwithstanding the high velocities attained by these small-bore projectiles, their shock-giving properties are not such as to insure the immediate collapse of the larger game, unless hit in heart or brain.

The bullets in general use for rook and rabbit shooting are the ·295, ·250, or the ·220, but most sportsmen are of opinion that the ·250 is the smallest bullet that should be used for rabbits.

The following table gives the weights of these bullets with their powder charges :—

WEIGHT OF BULLET.	CHARGE OF POWDER.
·295, hollow-pointed, 80 grs.	10 grs.
·295, solid, 80 grs.	10 ,,
·250, ,, 56 ,,	7 ,,
·220, ,, short, 30 grs.	3 ,,
·220, ,, long, 30 ,,	4 ,,
·220, ,, extra long, 40 grs.	5 ,,

Cartridge Cases—For rifles, of whatever bore, these should be of brass and solid drawn. For ball and shot guns of the "Paradox" type it is permissible to use paper cases if thought desirable. The selection and mixing of metals for the metallic cases requires the utmost care to insure a high degree of elasticity in the finished cartridge case, so that after it has been expanded by the explosion to fit the chamber of the rifle it will resume its original dimensions, or nearly so. If this important point is not attended to, difficulties will arise with the extraction of the empty cases. When, however, the cases are made of suitable metal they may be resized and reloaded repeatedly without fear of their jamming in the chamber. The cap-dome in the base of the cartridge case is made to suit the nature of the powder to be used. Some have a large or small central flash-hole, whilst others are provided with two or more flash-holes which are placed round the apex of the dome. The percussion caps are also made suitable for the different powders. Some powders, such, for instance, as black, merely require a heating flash; whereas smokeless powders, especially those of the concentrated type, require a special cap composition. The question of percussion caps is at the present time a very vexed one, the igniting agent not having received the attention it deserves in face of repeated issues of new or improved powders.

Wadding—In most cases the wadding made of soft felt and saturated with grease is to be preferred for rifle ammunition, but a grease-proof wad should, in every instance, be interposed between it and the powder. In many kinds of rifle cartridge, the felt wad is dispensed with and a wad formed of a mixture of bees'-wax and tallow, with a thin jute wad to prevent the grease injuring the powder, is used in its place. No wadding whatever is used with the ·303 Lee-Metford and the ·256 Mannlicher, the bullet being made large enough in diameter to act as its own gas check.

H. F. PHILLIPS.

ANGLING—Definition of the Term—Although there may be considerable doubt as to the exact origin of the term, "Angling" may be defined as the art of fishing with rod, line, and hook. Even the derivation of the word is a matter of dispute, but whether it be from the Latin, Greek, or Dutch, we may safely assume that the hook is always indicated as indispensable for the catching of fish. One of the recently published dictionaries describes Angling as "fishing with an angle." About this there is a charming vagueness which leaves abundant room for the exercise of private judgment.

History—In the voluminous and ever-increasing literature of Angling a vast variety of interesting speculation has been compassed as to the history of the art. There are well-known passages in the Old Testament which are quoted as proof that the ancients were accustomed to fish with hook and line, if not with rod; and inscriptions and drawings recovered from unearthed cities leave no doubt that the Greeks, Egyptians, and Romans included Angling amongst their occupations or pastimes. The Egyptians must have brought their practice of the art to considerable perfection, for amongst the wonderful relics excavated from the tombs by Professor Flinders Petrie are well-preserved examples of fish-hooks of admirable shape and make, and in general characteristics not unlike the Limerick pattern beloved by salmon fishers in the present day. Here, again, is suggested food for fancy, and if there is no evidence (as some have alleged there is) that Tubal Cain was the first manufacturer of fish-hooks, and that one of Noah's sons was the first fly-dresser, there is no living person who can authoritatively affirm otherwise. The supporting argument that fish were the only outside animals which survived the flood is, to say the least, ingenious.

The old-world fishing must have been a matter of honest and every-day pot-hunting. It would first become a calling, and then a science. However, early in civilisation Angling was evidently practised as a sport, and there are oft-quoted passages from Oppian that might be, with little alteration, adapted in describing a fight to-day with a big salmon or pike in a British stream.

Older Literature—The character and progress of Angling amongst the ancients are too much matters of conjecture to justify more than a passing allusion; but we are on firm ground in the period which may be said to be represented by the legendary Dame Juliana Barnes, whose treatise was the first published work upon fishing, although it would seem that the earliest known reference to Angling in England is a brief passage in a tract, entitled *Piers Fulham*, supposed to have been written about the year 1420. The *Treatyse of Fysshynge wyth an Angle*

goes, however, into particulars, and shows that fishermen of the day were familiar with the use of rod, line, hook, leads, floats, and fishing boats. The Romans undoubtedly knew something about artificial flies, and used them, but it is believed that fly fishing was practised in this country in the fifteenth century, and the aforesaid lady of St. Albans gives a respectable list of the flies to be used in successive fishing months, her season very reasonably beginning with March instead of February, as with us. This list of flies, however, only refers to trout and grayling. In the next century Leonard Mascall published a book on fishing with hook and line, and it contains much practical wisdom about fish culture. The angling pictures were taken from Dame Barnes. Early in the seventeenth century a published angling poem by "J. D." (John Dennys) teemed with sound advice and instruction to anglers. In these old books the development of Angling may be traced, and they indicate that the sport was well established amongst the English people. In the same period Gervase Markham issued his *Art of Angling*, which is to a great extent a rendering into prose of "John Dennys, Esq."

Walton—Walton and his contemporaries may be taken to represent another period, in which the anglers were good all-round sportsmen. More than that, not only Cotton's contribution to the *Compleat Angler*, but Barker's little book which was published before Walton's immortal classic, furnishes internal evidence of proficiency in the dressing of flies and use of the fly rod. Walton probably took not a little of his information from Barker, who appears to have been the first English writer to mention the use of the winch in fishing. The old woodcut illustrations of this period represent the rod without the winch, but some sort of a reel (or as they used to call it, winder) was not unknown to the few. After Walton there is not, for a while, much in literature to indicate in what degree Angling developed; but an active and cultured English Angling School arose soon after the opening of the nineteenth century, and Salter, Davy, Hofland, and others were amongst its head masters. The revolution brought about by steam and cheap literature gave an impetus to our play, no less than to our work, and Angling advanced with leaps and bounds, foremost amongst the leaders of the more modern period being "Ephemera," Francis Francis, Rooper, Pennell, and many others in England; Stoddart and Stewart in Scotland; Newland and Maxwell in Ireland. Anglers are now a great host; their sport has its periodical press; a modern community is not complete without its fishing club; and Westwood and Satchell's *Bibliotheca Piscatoria*, which was published in 1883, catalogues over three thousand works more or less concerning fish and fishing.

Fly Fishing—Although in matters of sport comparisons should never be invidious, by common consent there may be legitimate distinctions. Hence fly fishing is universally regarded as the highest form of angling, and it is a claim which is not advanced without sufficient reason. For example, it appeals most of all to the artistic and imaginative fancy; it demands special knowledge; it requires delicate skill; its exercise is at once costly, and beset with difficulties of an exceptional nature.

On behalf of fly fishing it is further to be said that it is applied to the choicest of our fresh-water fishes, since members of the Salmonidæ, which are, technically speaking, the game fishes of this country, head the catalogue of species which are habitually lured by the artificial fly. These require the purest and best preserved streams for their habitation; sluggish and open waters are not their natural home, though they often do maintain an existence therein. The proper habitat of the game fishes is all that is brightest and best of our rivers and lakes; it is the stream which runs crystal clear and pursues a joyous course that is the ideal home of salmon, trout, and grayling; and not the least of the fascinations which make fly fishing an absorbing pursuit is the association it brings as a matter of course with the most picturesque phases of natural scenery. These are amongst the reasons why fly fishing is always lauded and magnified to an extent not possible with other branches of angling. It is often urged, indeed, with ample justification, that the fly fisher is by his sport brought face to face with sylvan beauties seldom visited by others, and that in his progress in or upon the water, and along its banks, he explores exquisite nooks and corners which even the searching eye of the wandering artist has not the opportunity of discovering.

Salmon—While fly fishing is considered the highest form of the art of angling, it is to be remembered that it is but a section of a general sport, and that it has distinctions within itself offering endless variety of attraction. In glancing at these, the salmon must come first into consideration. With some sportsmen fly fishing means salmon or sea-trout fishing only, just as the word "fish" in Scotland is an exclusive term by which *Salmo salar* alone is honoured. In trout fishing there have of late years grown up definite schools, but the noble sport of salmon fishing does not admit of much divergence from the settled practices of our forefathers; with the exception of developments here and there, not necessarily improvements, in the details of rods, lines, and artificial flies, the general principles of salmon fishing remain what they were fifty or sixty years ago, when there were eminent masters whose wisdom is embalmed in the literature of their day, and whose prowess has never been surpassed.

There are, it is true, other methods than fly fishing for the capture of salmon, and these have in the present day, perhaps, increased rather than diminished. By the fly fisher pure and simple they are viewed with disfavour. But there are excuses to be advanced. It is not always that a salmon will be in the humour to rise to a fly; and there are rivers, of which the Trent, in the Midlands, is the most conspicuous example, where salmon habitually decline to be taken by the artificial fly. They have been tempted with every known composition of fur and feather, yet to no purpose. Even in what are known as the sporting salmon rivers, for which enormous rents are paid, there are pools that are apparently by nature "sulky"; the fish run into them and lie there, and may be caught by spinning baits, prawns, or worms, but as a rule they refuse the fly. Perhaps if salmon fishers would oftener try the experiment of sinking their fly to somewhere near the bottom they might be more successful, but it is not easy to persuade the purist that the wrapping of lead round the body of his Jock Scott or Durham Ranger, or the adoption of any other unusual device for taking the line down to the floor of the pool, consorts with the honourable canons of sport.

The apparatus for salmon fishing and some other methods of angling will be treated of in their alphabetical order as they occur in future numbers; at present we are concerned with the general principles, and the mention of such matters as spinning, prawning, and worming for salmon may be dismissed with the remark that they are not in themselves illegal, that they are operations requiring great skill, and that, under certain conditions, they are legitimate practices if conducted in sportsmanlike manner. The rod is the item of the fly-fisher's equipment of highest importance, and he should aim at selecting one suitable to the size of his hand, the strength of his wrist and the length of his arm, the inches of his stature and his physical strength; he should be equally careful to attach to a reel, in balance with the rod, a line that, being neither too heavy nor too light, will work in harmony with both. These are first principles, and it may be added that the line or collar of gut attached to the winch line should be of a substance in proportion to the rest of the tackle as well as suitable to the kind of fishing to be engaged in; and that the artificial fly should be suited to the character of the water upon which it will be cast. These admonitions are the A B C of the game, but it is necessary to put them in plain words, for one often meets brother sportsmen who have fished long enough to have earned the description of experienced, yet who make their recreation a burden and their sport a failure by non-observance of just such primary considerations.

Choice of Rod—Spite of much written and oral advice, the man himself must be the judge of the rod that will suit him. The discussions which are conducted as to the relative merits of whole cane, split cane, or greenheart rods, should not persuade the purchaser to

SALMON ROD. 14-FT. TWO-HANDED ROD.* TROUT ROD.

* [The Editors have to thank Mr. C. S. Cummins for assistance in illustrating this article.]

overlook the paramount importance of obtaining the thing that pleases, not his ethical notions, but his hand and arm. In the matter of rods we have learned something from American sportsmen; no longer is it insisted, as a hard and fast law admitting of no amending clause, that the salmon-rod must be eighteen or twenty feet in length. The longer the rod

the more power, of course, in the casting of the line, in its recovery from the water, and in the command of a fish when the hook has been driven home. There are, obviously, many advantages which may be claimed for a long salmon rod, but they are too often obtained at the cost of excessive labour. When the angler is either fishing from the bank or wading in the stream, a rod of seventeen feet is, in these progressive days, considered to be adequate for all the purposes of salmon-fishing, and many British sportsmen are adopting the practice of their comrades across the Atlantic, and are content in boat fishing to use a rod of fifteen or sixteen feet; but it is strictly essential that the materials and workmanship should be of super-excellence. A length of line sufficient for all practical purposes can be cast by a rod of this description, and as for the playing of a heavy salmon, if the smaller rod entails upon the captor another ten minutes or quarter of an hour in the struggle, the eager sportsman will not complain of this as a serious hardship. There are well-known salmon rivers where angling is only possible from a boat, and if this is not the most scientific way of catching a salmon with the fly, it is largely practised, with most satisfactory results, and with the knowledge that if the operation of casting becomes in time monotonous, there are compensations in the minimum of tax levied upon physical exertion and mental excitement. The angler, however, whose enthusiasm is most warranted, is he who dons a suit of waders and, with well-spiked brogues, betakes him to the river bed, studying the places where salmon would naturally be found, regulating the length of his cast to suit the situation, and when fortunate, following his fish up or down, fighting him from terra firma. This sort of salmon-fishing offers the chances of many a moving incident on land and water, of perils and obstacles, of the wit of man pitted against the wonderful instinct and pluck of the gamest of fishes; and he is not to be laughed at as rhapsodical who avouches that he would rather hook one salmon in a contest so fought out than half a dozen from the tranquil limitations of a boat. But boat-fishing, like the use of baits other than artificial fly, is at times a necessity.

The British pessimist is occasionally heard to assert in those very desponding moments when he pretends to think that everything worth having is played out in this weary world, that our salmon-fishing, amongst other great institutions, has gone to the dogs; but, as a matter of fact, in our rivers that are properly preserved and managed, this particular sport, taking one season with another, and considering all circumstances, holds its own with that of any other country. For matters of practical comparison, we have to deal with Norway and Canada. In the early years of the century—when Sir Hyde Parker wrote that he sometimes had so much sport with the salmon as to be indifferent whether he fished any more for a week—phenomenal bags were made in Scandinavia, but we seldom hear of anything like such wonders in these days. In the rivers that are least harried by the nets, Norway salmon-fishing is still fine in favourable seasons, but the old flavour is gone. In Canada, also, the results are on the whole enough to satisfy an average appetite for sport; but given a typical river like the Highland Dee, where the riparian owners have wisely taken measures to secure a free ascent of fish from the tidal waters, and taking into account the duration of the season with its spring, summer, and autumn runs of salmon and grilse, there is no better sport in the world, although the size of the fish may leave something to be desired. The legislation for salmon-fishing, which has long ago reached bewildering proportions, has been generally in the interests of the netsmen at the mouth, rather than for the sportsmen in the upper waters. The observer, indeed, who formed an opinion solely from the persistence with which in legislative action the sporting is sacrificed to the commercial interest in the matter of salmon-fishing, would not be much out of order in defending Napoleon's dictum that we are a nation of shopkeepers. The worst drawback to the salmon-fisher in the British Islands is the caprice of the climate, with its alternations or long spells of drought and flood. Over-netting in the tidal waters is also the curse of nearly all the good salmon streams of the United Kingdom, and without early remedy by Act of Parliament even the commercial interests will be ruined by greed. A painfully notorious illustration of a salmon river temporarily ruined for the angler is the Blackwater in Ireland; once the desire of all sportsmen, it is now practically worthless for rod and line. [*See* SALMON-FISHING.]

Sea-Trout—For the main requirements of legal phraseology and official regulations salmon and sea-trout are one: and to the angler the latter is the former in miniature. *Salmo trutta* is angled for in the same way as his bigger relative, but with every item of tackle correspondingly reduced in dimensions. A double-handed rod of fourteen feet, with line, winch, and gut-cast in character, and small flies of bright dressings, present a kind of connecting link between the strong tackle that should be designed to deal with a forty or fifty pound salmon, and the dainty accoutrements of the practitioner who devotes his attentions to the non-migratory Salmonidæ. Sea-trout angling, when the fish are running freely from the sea, and sporting at their best in the streams and pools which they affect as regularly as the seasons revolve, is superlatively delightful; there is no trying labour in handling the rod, and the sea-trout is probably the most sporting of all British fishes in his leaps and

bounds, in his undying determination to yield only with his life, and in his bold advances when the right humour is upon him.

Trout—Fly fishing for fresh-water trout (as *Salmo fario* and his kind are termed as a matter of convenience rather than accuracy, since the migratory fish seek the fresh waters, and the non-migratory often drop down to salt) is the pursuit of the many amongst the educated classes; and amongst them there has of late years grown up or developed what is known as the dry-fly school. The word developed is suggested because probably so long as men have fished for trout with the artificial fly, it has been used both wet and dry. In the case of salmon-angling, it is not certain in what light a fish regards the artificial fly. Opinions differ, and doctors disagree upon the question, but the popular idea is that it is taken for some creature pursuing its erratic movement in the water. The acceptance of this theory, however, raises the very vexed question of whether salmon are total abstainers from food in fresh water, and its rejection throws upon us the onus of believing that the mighty boil of the fish is merely playfulness, or an angry attack upon an object which has caught its attention and aroused its irritation. In preparing the fly for, and offering it to, the bonnie brown trout, however, there is substantial foundation to work upon. With many of the movements of the salmon we are unfamiliar; the dark, swirling, heavy, eddying waters of a typical salmon pool forbid observation of its tenants, except when they condescend to break the surface at uncertain intervals. The representative inland trout stream, on the contrary, should be clear and sparkling, flowing over alternating deeps and shallows; and while the life history of *Salmo salar* has yet to be written in its entirety and with certainty, we have little if anything to learn of the common trout from beginning to end. He is under our eye from cradle to grave. Although insect food is not by any means his exclusive, or even principal, diet, it is his choicest dish, and his preference for it is probably only limited by the everlasting question of supply and demand. There are rivers once famous for their good trout-fishing that are losing, or have entirely lost, their reputation. The trout still exist in even larger numbers than in the palmy days of sport, but the insect life has, for reasons which are difficult to define, almost entirely disappeared, and the stream so changed is no more praised as "free rising." With the steady hatch of ephemeridæ a thing of the past, the trout fall into other habits. Though, however, the olive-dun or March brown may float down in single spies instead of battalions, the old instinct remains; the trout will rise to the fly when his keen eye detects the airy form sailing upon the surface overhead. The angler is therefore able to proceed upon tolerably sure knowledge; he knows that his fly must be presented to the fish on the understanding that it is to be in all essentials a colourable imitation of the insects hatched in that particular water, or the land-born flies that are blown to their doom from the sedges and overhanging bushes. In this respect the trout-fisher is a class to himself. There are purists also here; while there are salmon-fishers who never handled a trout-rod, thinking it beneath their standard and notice, so are there fly-fishers for trout who will have nothing to do with what they deem the rougher and coarser wielding of the big salmon rod, with its heavy line and strong cast.

Loch Fly.

Eyed Hooks—Until comparatively recent times, fly-fishing for trout signified the use of a cast of two or three or more winged or hackled flies, to be cast on speculation and allowed to travel down with the stream, more or less submerged. This is what is now classified as wet-fly fishing. It might be imagined, from the prominence given to the contentions and ideas of the new dry-fly school in periodical and permanent angling literature, that all the world is at the present time a dry-fly fisher; yet the dry-fly school, though its members include the most eminent of anglers, is a comparatively limited one in numbers, and its history may be briefly told. A few years ago Mr. H. S. Hall, then, as now, mathematical master at Clifton College, sent a communication to an angling journal advocating the use of artificial flies dressed upon hooks with upturned metal eyes,

Salmon Fly.

to which the end of the collar might be knotted, as a preferable plan to the attachment of gut lengths as an essential part of the dressing of the fly. Eyed hooks had undoubtedly been known before in one shape or another, but the universal practice was to tie the fly to a length of gut. The advantages claimed for the eyed hook were: (1) that fewer flies were whipped off in casting; (2) that the liability of the gut attachment at the head of the fly to fray and break was

obviated; (3) that the angler could always make certain that the even continuity of his collar or casting line was not marred by the juncture at the critical portion of a strand of gut out of due proportion; (4) that the fly was always ready for use on gut which could be kept in a proper condition to receive it; (5) that a stock of eyed hook flies sufficient for a day or a week might be kept in a box in a single pocket, and preserved in ease and safety from one year to another without danger of treachery from rotten gut. The communication thus published roused a widespread interest, and kindred ideas that had been previously entertained by a few anglers were gradually made known.

FLOATING FLY.

Dry-Fly School—Out of the discussion arose the doctrine of the education of trout. The chalk streams fishers laid special emphasis upon the virtues of the dry-fly as an antidote to the growing difficulty of angling. They insisted that in rivers where the trout used to rise with regularity and confidence, and where sport might be reckoned upon as a tolerable certainty, the fish had become shy, suspicious, and in point of fact educated. The old-fashioned methods of fishing with a cast of artificial flies for such unnatural trout were deprecated as obsolete, and the superior attractions of a single artificial fly, made very small, dressed with upstanding wings, cast with a scientific calculation of direction and force never dreamt of previously—the *sine qua non* being to deliver the imitation fly in the exact presentment of the natural insect, and in a manner that would ensure its floating upon the stream as if it were the real thing—were urged with eloquent enthusiasm. It was in this way that the dry-fly school began to acquire a name of its own; converts were made, and are still giving in adherence; and one of the results has been the evolution of an entirely different character of artificial fly. The dry-fly school of angling is said to include among its members some dogmatists who will scarcely admit the wet-fly brethren to *brevet* rank, but there is room for all and reason on both sides.

In mountain-born waters, like the trout streams of Scotland, Ireland, and Wales, the fascinating old-fashioned style of fishing with a cast of flies rules as if nothing had happened; the rapid rivers must be fished in that way, and the master fly-fisher for trout is the man who, regulating his methods to the requirements of the day, the water, and their ever varying moods, can adapt himself to circumstances as an adept of all styles.

It is one of the leading instructions of the dry-fly master that the disciple shall remain inactive, possessing his soul in patience, and standing by until the trout are seen to be visibly rising at, and taking, the fly sailing down stream. On Itchen, Test, Kennet, and any other typical chalk stream, the angler may accordingly be observed, for hours together, watching for the rise. The wet-fly fisherman, with his cast of assorted winged, hackled, or spider patterns, like his forefathers, arriving at the waterside, comes into action at once, animated by the hope that the trout, if they give no sign of dimpling ring, are busy below, feeding on trifles borne at varying depths in the current. Should they treat his flies with disdain, at least no opportunity has been wasted. The experienced dry-fly fisherman, where the character of the stream does not for-

WAITING FOR THE RISE.

bid, stations himself below the fish, kneeling on the bank to lessen the chances of scaring the shy trout; his aim is to cast his single floating-fly three or four inches above the mentally marked position of a rising fish, and to do this accurately at the first cast. Simple as the operation may appear, it can only be done to perfection by the exercise of long experience and extreme skill. The casting of the line so that the floating-fly shall drop at the precise point aimed at and at once assume the position and appearance of the natural insect, and to do this when and where it will secure the attention of, but without alarming, the alert trout below, is one of the triumphant feats of fly fishing. The

whisking of the fly through the air by backward and forward wavings of the rod, and the length of line often necessary for reaching a distant fish, keep the angler in healthy exercise if the rise is protracted. The former tax upon the strength may, however, be lessened, though not quite avoided, by the modern practice of anointing the fly with odourless paraffin, or some other unguent, by a touch of the camel's-hair brush on hackles and wings; a couple of flourishes will then suffice for drying the fly.

The wet-fly fisherman, who cares for none of these things, has the privilege, at any rate, of being constantly on the move, always hopeful that at least one of his flies will find a trout; while in the progress of fishing steadily up or down the stream he is able to change his scene with his chances at every hour. The dry-fly fisherman was a South of England product, and was the effect of which the educated trout of the chalk streams was the cause. In other parts of the three kingdoms, the wet-fly fisherman is the rule, but it is a rule the exceptions to which are becoming more and more numerous. [*See* TROUT and CHAR.]

Artificial flies, either for salmon or the smaller game fish, will be treated of hereafter. [*See* SALMON and SEA-TROUT, FLY DRESSING.]

A general reference to fly fishing does not end with mention of salmon, *salmo trutta*, and fresh-water trout. The grayling must have passing attention. This is a fish which, with many undoubted sporting qualities and one special virtue, is not always popular with trout fishermen. Yet it is one of the freest of surface-feeders, and has all the qualities of a fly-fisher's pet. Having an adipose fin, the grayling is, like the smelt, classed among the *Salmonidæ*, but in bodily appearance there is no other resemblance. It, however, gives the same kind of sport, with, generally speaking, the same methods in fly fishing; and the special virtue hinted at above is that, when trout fishing ceases at the end of September, the grayling is at its prime, and may be fished for throughout the winter. [*See* GRAYLING.]

Besides grayling there are a few of the summer spawners, such as dace, bleak, rudd, roach and chub, which, for want of bettter, are not unworthy the attention of the fly-fisher, the first four with small flies, and the last with large palmers, imitations of moths, bees, and beetles. Only in the hot months, however, is the sport at all worth the trouble of attempting their capture with the tackle intended for higher game. [*See* THAMES FISHING.]

Spinning and Trolling—These may be regarded as synonymous terms since, in the country south of the Trent, the second has fallen into disuse. In Scotland and Ireland, when fishing men talk about trolling, they mean the use of the spinning bait, especially as practised from a boat, and in the majority of instances the reference will be merely to the somewhat mechanical process of trailing from the stern. Trolling, however, is a word once of definite signification to English pike-fishers. It was known two centuries ago—was in use, probably, long before what we understand as spinning was in vogue. One of the quaintest of the older angling books is the venerable Nobbes' *Art of Trolling*. Nobbes was a master of the now discredited method. Its main feature was the dead gorge bait, which is now discountenanced by all respectable angling societies and sportsmanlike persons, except when used as a means of warrantable destruction. As the process, therefore, will not be further described it may here be stated that the bait employed is a dead roach, dace, or gudgeon, through whose body, from mouth to tail, is passed a leaded wire permitting the issue from the caudal fin of a short length of gimp looped at the end for fixture to the reel line. A rank hook, either a double or single, welded into the lead, slightly protrudes from the side of the bait's mouth. The small dead fish thus armed is cast at first close to the bank upon which the angler is standing, allowed to sink head first to the bottom, the angler pulling in short lengths of line in successive coils, working the bait up and down slowly in the water. The silvery fish is thus represented as swimming between and out of weeds, or as darting in spasmodic jerks from the bottom to the top, now sinking and now ascending. It is a deadly method of attracting the marauder lying *perdu* in the subaqueous copses. The pike seizes its prey across the middle of the body, twists it round into its bristling jaws and swallows (or gorges) it head foremost. The art, such as it was, of trolling, afforded wholesome recreation to generations of innocent pike-fishers, who never supposed they were sinning against the light. The secret of it was to ensure the complete gorging of the bait before putting any sort of check upon the line. The pike would sometimes seize the bait with a strong snap, which left the troller in no doubt of the fact, but very frequently the check would be so slight that the unaccustomed hand might suppose the sinking and roving bait was entangled with weed; if he then tightened the line the chances were strong that he would scare his pike. The custom, therefore, was to allow the fish to run unchecked until it stopped of its own accord; this it would presently do in pursuance of its habit of pausing to pouch or gorge. Fishermen used to time this period of expectancy ten minutes by the watch. When the bait was gorged, the gullet of the pike would so tightly encase the bait that the strong, protruding hooks entered its vitals. The victim came in with little fight, and there was no possibility of restoring it to the water after such treatment. Within recent times, as the stock of pike diminished

in rivers where they were tolerated for sport, an outcry was raised against the murderous gorge-hook, the principal objection being that under-sized fish were ruthlessly and unnecessarily slaughtered. In many waters the use of the gorge hook, as in the Thames, is therefore prohibited. With this passing description of a method which is now only legitimate in waters where pike are ranked as vermin, and where it is desirable to kill them of all sorts and sizes, we are free to deal with the general subject.

Spinning is the cosmopolitan form of angling. Allowed to rank next to fly fishing as a fine art, it is of wide application, is applied to every description of game fish, is not only popular with the fresh-water angler in Great Britain but with the sea-fisherman who thereby with rod and line obtains spirited sport with such fish as bass, pollack, and mackerel, and is practised by the casual angler in all parts of the globe. Wherever predatory fish are to be found, there the angler may remember the adage in whist, and when in doubt play his trump in the shape of some kind of spinning bait. Mahseer in India, the hucho in Bavaria, the monster trout of the Canadian lakes, the prolific salmon of the Pacific, are alike taken by the spinning rod. The method is capable of varied treatment, and has some of the good points which are enumerated for fly fishing; the spinning man, for example, is not condemned to inactivity in a Windsor chair, or on the camp-stool by the waterside, but like the trout or salmon fisher is in healthy bodily movement during his term of sport. Another recommendation to the hardy sportsman is that spinning for pike affords excellent recreation during the winter months, when all coarse fish are in the height of condition. Even when the grayling rise but seldom to the fly, the pike are in keen humour, in prime colour and form, with appetites often sharpened rather than depressed by the hard frosts and howling north-easters, which put an end to other kinds of sport.

Artificial Baits—The spinning-rod, however, is largely used also for salmon and trout. It is certain that the practice of spinning for salmon has increased during the last quarter of a century; and were all the truth made known, it would be found that many of the bags made upon salmon rivers, and published weekly in the sporting newspapers, are made by the blue phantom, or silver and golden minnow. The principle underlying the art of spinning is to attract the fish by the movement through the water of an object that shall imitate, in shape and action, some form of aquatic life. The artificial baits which have been invented to effect this object are legion. They are of metal, gutta-percha, and of soleskin, in the case of the phantom, which is a collapsible object when out of the water, but a plump imitation of trout, gudgeon, or loach when, set in motion by the spinning-rod, it becomes filled with water. Some of the artificial baits, brightly glittering, or artificially coloured, are armed with fans at the head to ensure the spinning, but these permanent outstanding fixtures are not in unison with the tastes of all anglers; to meet their wishes a very effective pattern of artificial fish is produced, the spin of which is effected by a fixed

Pike Rod and Bar-spoon.

curvature of the tail. Notwithstanding the host of "notions" which have been placed upon the market as registered or patented inventions, there is probably no better all-round artificial spinning-bait for salmon and pike than the spoon, which spins, as the saying goes, like a flash, is without the complications which often render the ingenious patents useless after a few trials, and which, by the colouring of the inner

surface (gold, copper, or even red), presents a brilliantly tempting appearance in the water. In the salmon rivers of Norway, in the estuaries on the Pacific coast, there is no more trusted lure than the spoon. For pike fishing also this rough and ready imitation of a darting fish is most effective, and when the pike run large, a spoon of five inches in length is not a whit oversized. It is maintained that the spoon as a bait for predatory fish was first discovered by accident in the United States, and at the Chicago World's Fair, what was labelled as the first spoon ever used in angling, was exhibited. The rude mother-of-pearl and bone hooks that are used by the South Sea Islanders, and certain devices known to the New Zealand Maories when the white settler first visited them, were the crude originals of the beautifully finished spinning-baits of to-day.

Natural Baits—The small natural fishes upon which the ravenous pike, prowling perch, and dashing trout of our fresh waters largely subsist, are, however, the most reliable baits for general spinning, and for their utilisation there is an ample choice of flights and hooks at the service of the angler. The earlier kinds of spinning flights consisted of two or three sets of strong triangles with perhaps a single hook for insertion in the lip. For salmon or trout such hooks are mounted upon treble or single gut to suit the magnitude of the fish to be caught. The formidable teeth of the pike, and the serrated interior of his gaping mouth, render it necessary, however, to approach him with stronger gear, and the hooks should be fastened to a six-inch length of gimp, or a special adaptation of wire. The two objects which the spinner must primarily keep in view are (1) the employment of swivelled traces and bait fashioned so as to ensure regular spinning, bringing the bait though the water in, as far as possible, a natural course and manner of progression; and (2) regulation of the advancing object at a speed and depth suitable to the habits of the fish and the force, colour, and depth of the water. Spinning, if properly studied, requires intelligent study of the circumstances of the day. In fairly flowing rivers, the current will, in practised hands, like the action of the rod in fly fishing, do much of the work for the angler, while in a lake or dead pool he must rely entirely upon his own dexterity, unless he indulges in the harling or trailing in which the boatmen play a leading part. It must be repeated that the paramount essential is that the bait spins properly. The salmon- or trout-fisher who uses the phantom, spoon, or minnow may reckon upon the encouraging assistance of a lively current, which, in a measure, if he understands how to humour it, will take charge of the bait, and present it in the most perfect manner to the fish over which it travels; when the line is trailed from the stern of a boat a like advantage is ensured by the intelligently-calculated rowing of an experienced boatman. Anglers who have carefully studied the habits of the pike, which is the fish *par excellence* for the spinning-rod, frequently differ in opinion upon one point, viz., is it best that the bait should spin in a straight line, or in a series of jerks and gyrations? In this, as in everything else (notably in wet- and dry-fly fishing), it will be found that the best man in the long run is he who can adapt himself to all conditions. There are times when a pike that will run half-heartedly at the bait which represents a smaller fish moving in a decorously straight track, will rush savagely at the imitation which, by a different fixing of the tackle, is induced to progress in a series of awkward and fantastic evolutions. The theory is that the appearance of a roach swimming at ease was apparently noticed without excitement, while the suggestion that here was a wounded or feeble creature, trying to escape, aroused the sharkish propensities of the wolf of the waters.

The duty devolving upon the angler, any where and at all times, is plain: if one method fails, try another. One of the most important considerations, yet one commonly overlooked in spinning, is the weighting of the bait to correspond with the character of the water fished. The latest tackles devised for spinning with natural baits have been brought to a high state of effectiveness; there are endless contrivances for fastening the hooks to the dead fish, and for concealing the weight necessary for sinking it in its own body. This is without question better than leads, detachable or permanent, affixed a foot or so up the trace; with certain tackles, these are, however, unavoidable, but a double splash is inevitable when the bait is cast forth by the spinning-rod. The bait leaded within itself, on the contrary, may, skilfully treated, be made to fall lightly, with but one disturbance. The detachable lead carries the distinct advantage of enabling the angler to weight his gear to suit the different conditions of water.

Faulty Spinning—Too many spinning men seem to have an idea, if they ever think at all about the matter, that the fish for which they spin are surface or middle-water feeders, and the result is disastrous. Pike lie low, and spring upwards, as their mood finds them. To-day they will not budge for anything but prey that touches their nose; to-morrow they will leap from the deep out of water in pursuit. Mid-water is the happy mean for spinning, but quite close to the bottom is frequently the depth to which the bait should be regulated. There is no more besetting sin in the spinner, above all in the pike-fisher, than to work above the heads of his game. Another mistake frequently made is as to speed. It stands to reason that a fish must be honestly sharp set, and in the true fighting humour, to dart after prey that is scurrying through the water at express speed. The rapid spinner is like the fly fisher who plucks away the fly in over-eager fashion. The accomplished angler always avoids

these two dangers, and will never rest until he learns how to weight his bait to a nicety at will, and to accomplish speed upon common-sense principles.

We have mentioned as fish which are systematically caught by spinning, the salmon, trout, pike, perch and sundry sport-yielding sea fish, but at odd times chub, carp, grayling, dace, eels, and barbel are deluded by spinning-hooks fairly taken in their mouths. Barbel are so caught principally in the state of restlessness incidental to recovery from the exhaustion of spawning. At these interesting periods they pack together in the rough water, and it is a daily experience during April and May for Thames trouters, spinning from the weir heads, to have their time and temper wasted by struggles with huge, worthless, out-of-season barbel. The taking of spinning-baits by grayling, and by the minor coarse fish, may be included amongst the things that seldom happen. These remarks upon spinning have of necessity involved frequent mention of salmon, trout, and pike, and it may be added that a so-called spinning-fly has been introduced into salmon fishing; the creation is distinguished by a pair of metal fans at the head of an ordinary salmon-fly, and the trace must be swivelled.

Imitations of small birds cast with spinning or salmon-rod for pike, are often successful in shallow waters, in the late summer months, when the fish are basking among the weeds, but it is only by a stretch of imagination that this method can be described as either fly fishing or spinning. It stands as an independent entry in the methods of pike fishing, and with it may here be mentioned the much practised sport of fishing with live bait upon snap-tackle, by which the fish, struck sharply at the run, is hooked in the mouth, and has therefore the opportunity of return to the water if undersized or out of condition. [*See* PIKE.]

LIVE BAIT TACKLE. ("Jardine Snap.")

Bottom Fishing — In angling, the greatest happiness for the greatest number is yielded by the humbler phase of the sport which has been, not too happily, designated as bottom fishing. The presumption that the plebeian denizens of the lake, river, and pond feed entirely upon the bottom is but partly warranted. As has been intimated on a previous page, some of the so-called "coarse" fish are surface feeders, and the dace is so much so, that it might almost be considered a link between the game fish proper, and those which are specially treated in the Act of Parliament bearing the name of Mr. Mundella, who took charge of the measure in the year when the Fresh-water Fisheries Act became law. The remarkable increase in the number of anglers has chiefly been amongst the wage-earning classes, who fish in the more primitive methods which may be followed at a minimum of expense and expenditure of time. The schoolboy who is born with the instinct of angling first puts his predilections into practice by a simple wand, a length of string, a painted float, a shotted line, and a cheap hook that is nevertheless all-sufficient for impaling the wriggling worm or pellet of paste, and for swishing out behind him the perch and roach which constitute his juvenile triumphs. The unpoisoned rivers in the vicinity of towns are still well stocked with roach and dace, with barbel, chub, bream, and gudgeon; and in the lakes and ponds there are stores of tench and carp, which are also occasionally found in rivers.

The apparatus used in coarse-fishing is cheaper and more simple than that necessary for the more aristocratic branches of the sport, and that is why, since the diffusion of cheap literature and the facilities for travel established by railways, the artisans of Great Britain have in their tens of thousands become patient disciples of Izaak Walton. All anglers are called Waltonians, but it is doubtful whether the old man knew much about fly fishing or spinning. He, however, was an adept in all-round fishing, and his memorable idyll owes its charms to his love for, and knowledge of, angling for coarse fish. The crowds of men and youths who go out of London every Sunday for the Thames or Lea, or from the large provincial towns to the rivers which flow near their homes, may not have read their Izaak Walton, but in the main they follow the directions which he laid down, and which have been adopted from generation to generation with very little alteration. To those who never personally angled for roach in the Thames or Trent, or for bream in the slow-running Midland rivers, the recreation, with its modest appliances, may seem ridiculously simple, yet in its degree there is as much skill required for success with these essentially shy species as with those which have been previously considered.

Rods and Lines—The most general form of bottom-fishing is for roach and dace. These gregarious fish shift their ground in search of food, cruising wide in summer, and retiring to the deeps as the weeds which supply them with food disappear before autumn floods and winter frosts. Their established haunts are the angler's "swims," and by the aid of ground-bait the fish may, when they intermittently rove, be soon attracted back. All fish are easily frightened by disturbance or unaccustomed objects on the bank, but the roach is pre-eminently shy, and to be an adept in catching it demands long experience and infinite patience. There are also schools of bottom-fishermen, and they are in the nature of old foundations. Thames, Trent, and Lea have

The Mill Pool

their own curriculum. The bank-fisher's stock begins with a hollow bamboo rod of eighteen or twenty feet in length, without rings or winch fastenings. There being no reel a running line is dispensed with. The line for this rod should be fine, and shorter than the rod, for the fish bites gingerly, and the strike should be instantaneous; this is only possible with a rod that is comparatively stiff, even to the point, and length of line sufficient to permit of angling with the rod held horizontally over the water. Sometimes the roach bites boldly, and the quill float disappearing sharply, a turn of the angler's wrist and a quick uplifting of the point hooks the stricken fish; with such a rod, landing is effected by unshipping the butt and reducing the length.

Until comparatively recent times all the footlines were of horsehair, and many modern roach-fishers use them. To the human eye, horse-hair looks much coarser than the fine drawn gut which has extensively superseded it, but as it keeps free of globules of water, and does not glitter, it is probably least obtrusive to the eye of the fish. Mention has been made of ground-bait, and although it is indispensable, in excess it is destructive of chances. Most professional fishermen indulge profusely in masses of moistened bran, bread, and clay pounded together. The object of ground-bait is to attract and not surfeit, and no more is required in the ordinary forms of bottom-fishing than a few balls so kneaded that the lighter constituents slowly flake off when the bulk has found resting place; small pellets thrown in at intervals are enough to keep the fish, once gathered to the spot, in the swim. Coarse fish, like the bream, may have more liberal treatment, and bushels of grains are often cast forth over night to bring together a herd of fish for the angler at the earliest dawn of day. The favourite ground-bait for barbel, which has habits and haunts of its own, are large dew worms, whole or chopped, and chandlers' greaves.

Float Fishing—The methods of bottom fishing are—float-tackle, legering, and paternostering; and of these, the first affords the popular summer pastime on the river, with legering as the *tour de force* for barbel. The merits of float-fishing are apparent when the weedy bottom of a river is confronted, but when the bed is of gravel, hard sand, or clay, the leger will answer for almost any kind of coarse fish, and it is a method that suits the idle fisherman, who, having cast out his lead, through which the foot line is allowed to pass freely, waits until the "knock knock" at the rod-top signals a fish attempting the bait. In fishing a roach swim, the bait, shotted to trip over the bottom, is always travelling, to be withdrawn for re-travel as it reaches the end of the swim. The float drifts down its allotted course, necessitating no more exertion for the angler than its repeated withdrawal. It is, in summer time, a delightful form of angling, and social in its tendencies, in that ladies indulge in it, though, nowadays, it is growingly the fashion for fair dames and damsels to despise the gudgeon, which beauty draws with a single hair, and to be satisfied with nothing less than trout- or salmon-rod. The different ways in which these plebeians of the coarse-fish streams bite give zest to the sport. The roach nibbles so tenderly that, to an ordinary eye, the float is not disturbed, but the Thames or Lea expert will

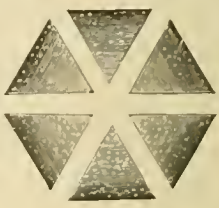
PIKE ROD. ROACH POLE. PUNT ROD.

have noticed the faint movement, and, striking at the right time, secured his prize. The dace pulls down the tell-tale with decision; the little gudgeon does the same; the wary carp (when it can be induced to feed at all) is also a bold customer. The perch, beloved of youngsters for his dashing, fearless habits, also leaves no doubt as to his proceedings under water. The tench, one of the least common of the coarse fishes, trifles with the bait before taking it, with leisurely movement. The bream is also a slow biter; and the fish has a habit of playing with the bait for several minutes before the final seizure. The float meanwhile will be bobbing and slanting, and even lying flat on the water,

a position caused by the fish rising with the bait in its mouth. Nor is it always safe to strike at this abnormal movement. It is much better to wait a moment or two, when the horizontal position will be gradually changed; the quill will slant off to the perpendicular, and then quickly disappear for final conclusions. The gamest of coarse fishes is the strongly-built barbel. Fishing "fine and far off," is a golden maxim for bottom-fishers, and one of the verities is a thorough acquaintance with the bed of the river. The plummet is the means to this end, and the practised angler would as soon think of going out without this useful article as without his hook.

Nottingham Method—The two high schools of bottom fishers, Thames and Trent, were once sharply defined, but they have learnt to adopt each other's styles. The principle of the Nottingham men was the travelling tackle, or "long corking"; in other words bottom fishing at a long distance from the angler's base. The special tackle for this is a long and supple rod, upright rings, a Nottingham reel without check or complications, the finest undressed silk lines, and quill or cork float. The angler, by this method, keeps absolutely out of sight of the fish. The Nottingham system of casting is flattered by imitations, and has become fashionable in salmon, trout, and pike fishing. It is difficult to master; everything is done from the free running winch, and the difficulty is to so regulate the reel, that there shall be no overrunning. The angler in preparing to cast, winds in his baited line until less than a yard length is left hanging from the top ring. He turns partly away from the water to effect the necessary swing over his left shoulder, and the skilful practitioner, bringing his shotted line round with a nicely-adjudged swing, casts an incredible distance. This is one of the approved methods of casting the phantom, or angel minnow for salmon or trout. With the Nottingham style, the coiling of the line on the grass, in the hand, or on the bottom of a boat, as with other methods, is avoided; and the fisherman is able to work without danger or confusion when there are obstacles behind or around him on the margin of the stream.

The Angler's Equipment—To describe in full the paraphernalia which furnish an angler's equipment, would be impossible and profitless. Without any extra encouragement, he is prone to overburden himself with non-essentials. Whatever branch of the sport he favours, he at least cannot do without his rod. There was a time when the ingenious makers of the United States were able, without deadly sin, to boast that we of the old country were centuries behind. Fishing so often as they do from boats in vast waters where there are no obstacles to the play of a fish, they were able to reduce the length of their rods and the corresponding tackle to the smallest proportions. Their special pre-eminence was in split cane rods, generally of six sections of selected cane glued together. We have overtaken them, and have for years produced rods that are not to be surpassed. The split cane rods, spite of their costliness, are highly appreciated, and English patterns are now exported to the Colonies, the Continent and America. Many salmon-fishers nevertheless remain faithful to the stouter, heavier, and cheaper, but not less serviceable, greenheart. It is the same with trout- as with salmon-rods in this respect. The selection, as has already been suggested, is a matter to be decided by the angler himself; the neophyte, of course, will take the counsel of a competent adviser; ornamental fittings are no harm if they are no good, and there is no law against buying a rod because it is the latest pattern. But the real desideratum is a weapon that can be handled without discomfort. The middle course lies between the extremes of stiffness and suppleness. With respect to a stiff fly-rod there are almost as many pros as cons. It is true that with a stiff rod the cast may be better delivered, the fly more decisively taken from the water, and a maximum of power obtained in a rough adverse wind, but flies are oftener whipped off, and the physical strength is more severely taxed. The springy rod is not so easily managed, but practice makes perfect; and when the taste has been acquired, as with the devotees of Castle Connell, it lasts for a lifetime. Another consideration in the choice of a fly rod is, ferrule *v.* splice. The advocates of the splice declare that the rod can be put together as quickly as the ferruled, but this is theory and not practical experience with the majority. There is no question that a well-spliced rod offers a harmony of play from butt to point which cannot possibly be obtained with the ferruled; but the balance of argument is on the side of the ferrule, especially in these days when automatic fastenings have been invented, removing the objection often heard to the inconvenience of tying the joints together.



SECTION OF SPLIT CANE.

Rod Woods—Although a number of new woods are continually tried for the manufacture of rods, the familiar materials are still the best. Greenheart is the timber most largely imported for rod making. The tree grows in British Guiana, and none but picked selections should be worked up by the rod-makers. Lancewood, with which the top joints were formerly made, being less heavy than greenheart, has gone a little out of fashion, except for the cheaper sort of trout-rod. The hickory used for the common rods turned out by the wholesale firms is the American variety. Ash

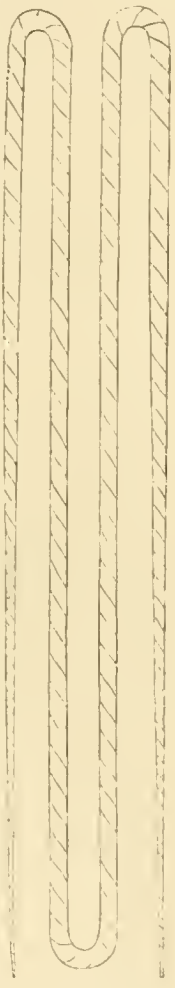
was once an indispensable butt for all kinds of fishing rods, and when the wood is well seasoned may always be depended upon. Washaba, mahoe, snakewood, and, most recently of all, another West Indian timber, called steelwood, enter into the composition of trout-rods, but do not oust the greenheart. The canes, however, have apparently come to stay, and the whole, or hollow, bamboo or cane, as it is termed in contradistinction to the solid split cane, is now much used for salmon- and trout-rods. The bamboo rods are very light and remarkably strong, but they are apt to weaken at the ferrule. Canes are mostly shipped from India.

Winches—Next to the rod is the winch; and this mechanism, much more than any other part of the angler's equipment, has monopolised the ingenuity of the patentee. In America, especially, the reel is an affair of complicated and delicate works, very beautiful to look at, delightful to use, so long as its intricate parts act smoothly as per design. But in angling, it is a wise maxim that the simplest is the best, and

NOTTINGHAM: PAST AND PRESENT.

that all inventions should be avoided which increase the risks of disaster when the angler is at the waterside far from means of repairing mechanical break-downs. These exquisite novelties will never lack customers; but most men, having given the patented and registered reels a trial, are content to return to the well-made hard-metal winches, with their serviceable check. The multiplying arrangement of the last generation has been discarded, and the tendency of the moment is towards the winches which are a compromise between the check pure and simple, and the absolutely unchecked Nottingham reel. The salmon-winch, for example, that will be required in a strong water where the fish run large, and where the stoutest of salmon-gut is necessary, will need a strong check action that will tell upon a running salmon without application of the hand to the line. When the streams are shrunken and clear, and the size of the fly has to be reduced to sea-trout size, with a corresponding change from the stoutest to medium gut, the check should be less obdurate. To meet these divers conditions, reels have been furnished with the means of regulating the revolutions of the free runners. The most recent of these is a clever invention whereby the angler, by putting his thumb upon the rim, can reduce the speed of the wheel to almost stoppage point. Reels are made of bronze, brass, gun- and other metals; of wood with light metal protections, and of ebonite. The reel should be, above all things, of the best quality, for it is the gear upon which dependence is direct in critical times. Rod, line, and fish are each and all in danger with an inferior winch.

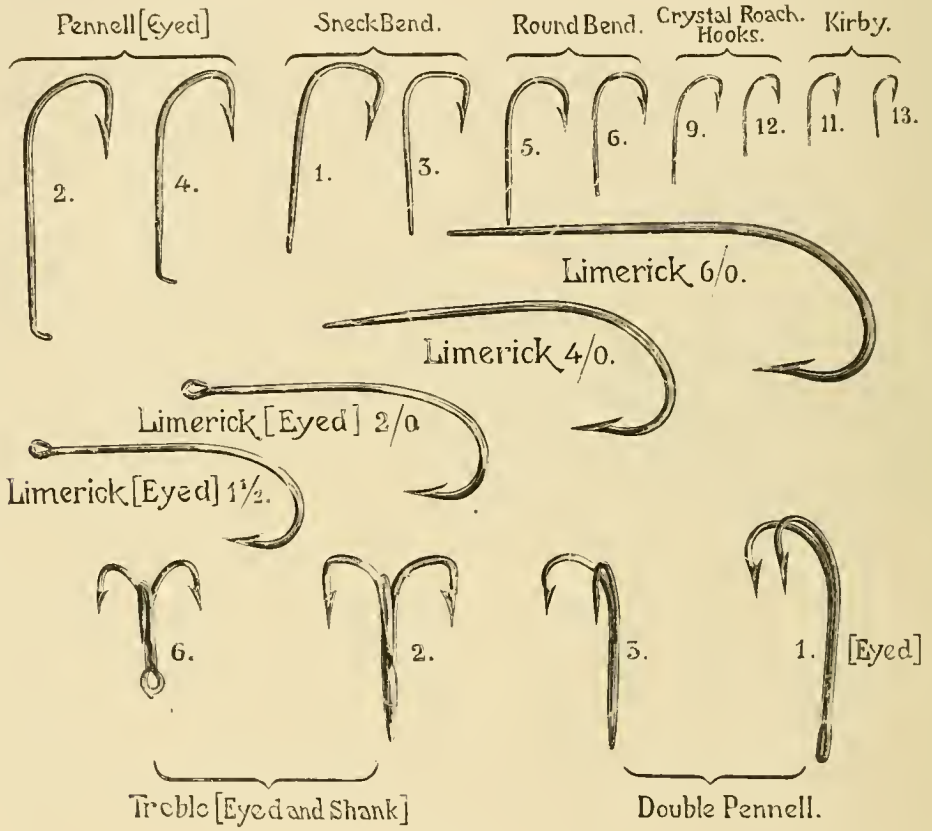
Lines—In lines, again, the whims and fancies of anglers are encouraged by the makers; the main considerations—after the matter of strength—are the weight of the line as adapted to the rod, and the best of dressings. For casting there was nothing better than the silk and hair formerly used by fly-fishers, but they were liable to hold the wet, to perish prematurely, and to play unpleasant tricks when least expected. Dressed silk lines are in these days thoroughly prepared by scientific methods. It is questionable whether a tapered line is, in the long run, preferable in salmon fishing to one of even substance. A salmon-line should be about 120 yards long, though it is seldom during a lifetime that 100 yards will not suffice. There is an element of excitement, no doubt, in the narrative one occasionally reads of a gallant fish taking 100 yards of line out at a gallop, but, with proper handling of the rod, such an occurrence seldom happens. A cast of 30 yards is a fair distance for the salmon-rod and generally ample for fishing purposes. A trout-line of 50 yards is more than sufficient for the day, as not half the quantity will be in use for ordinary fish. Such lines are now made for dry-fly fishing, tapered at both ends, and heavy in the middle to fit the temper of split cane rods.



TAPERED LINE.

Hooks—The bulk of the fish hooks used in the world are made in England—Redditch and Kendal being the centres of manufacture. They are exported by millions. The preference of the moment is for the Pennell-Limerick in salmon, and a Pennell-Sneck pattern for the superior class of small trout flies. The sizes vary from

the huge salmon-fly affected in the spring, and at other periods for heavy waters and the tiny midge iron, known as 000 or No. 17, according to the custom of the manufacturer. The latter are probably as near an approach to the invisible hook as can be reached with safety; and as they are often required to land trout of two and three pounds, the temper of the steel must be beyond suspicion. Individual fancy, here, as in other necessaries for a fisherman's outfit, will rule the choice of hooks, upon which experts like Mr. Cholmondeley-Pennell have devoted the study of a life-time. Upon the question of hooks, however, anglers are apt to be particularly faddy.

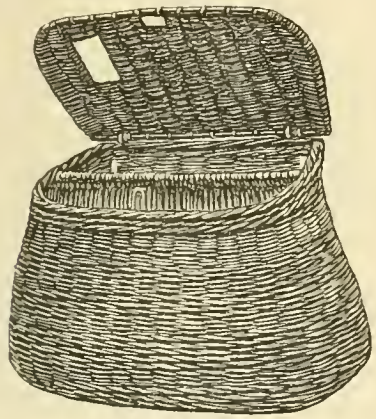


Scale of Hooks.

Various—The fly-fisher, besides his rod, line, and winch, his fly-book or his box, requires a net or gaff, a basket or bag, and a set of waders. These are the essentials of his equipment, but the catalogue may be extended *ad lib.* for those who require their spring balance weighing-machine, vaseline, "priest," gag, disgorger, knee-protector, clearing ring, and small bottle of odourless paraffin for the anointment of the cock-winged flies. In case of accidents by the waterside, a little spare silk, scissors, pliers, and wax, are really useful, but the angler's equipment, when overdone, increases his burden without adding to his efficiency. Many anglers are naturally expert in the making and repairing of tackle; others are naturally clumsy with their fingers and never succeed in even the rudimentary mechanical achievements. The incapables, however, need not distress themselves, since everything that is necessary, and with heaps to spare, can be purchased from the tackle makers.

Care of Tackle—There are certain operations, nevertheless, which the angler should try to master; he need not enter into a course of instruction in the mysteries of fly-dressing, but he should be able to whip a hook to a trace, or patch up a broken rod top. And, next to the acquisition of sound simple tackle comes the duty of taking methodical care of it, both when in use and when in inaction. The line should always be taken off the reel to dry at the end of a day's fishing; the ferruled joints should be kept vaselined; and every bit of varnish that is accidentally knocked off should be replaced; flies should be kept in an atmosphere of albo-carbon, or other preventive, to keep out moths; hooks deposited where rust will not corrupt, and gut casts excluded from light and moisture. Precautions like these mean money saved, and efficiency promoted.

Seasons and Regulations—By the law of the land, rod-fishing for salmon begins in England and Wales on February 1st and ends on November 2nd; in Scotland, the season is from February 10th to November 1st; in Ireland, the dates vary according to districts, but the close time for netting must never be less than 168 days. The general trout season begins with February and ends with September, but at present in Scotland there is no fence-time for trout. The duration of the close-seasons for salmon is often fixed by the local Boards of Conservators under powers given them by the Salmon Fisheries Act, and the legal limits are only enforced where the rivers are not under local governance. Accordingly, salmon-fishing in Scotland practically extends from January 10th in the north to the end of November in the south, but these are the extreme exceptions affecting a small proportion of the streams. All



MODERN CREEL.

private trout fisheries in England are allowed to fix their own close times, and they vary considerably in different districts. Trout are not in condition before March in any river, and in the choicest streams the opening day is in April or May. The last day of September is the invariable limit of the season. Salmon licences are required in England, Wales and Ireland, but not in Scotland.

By the Act for the Protection of Fresh-water Fish (Mundella's), passed in 1878, a close season is established in public waters from March 15th to June 15th for all kinds of fish other than the migratory species. The middle of June is, however, too early for the coarse fish which spawn in March, April, and May, and the pike and roach have not recovered their condition until July at the earliest. The Lea Conservators, indeed, do not allow angling for pike and perch till August 1st, nor for other coarse fish until the 1st July.

Minimum Sizes—The limits of size for fish caught in angling vary, according to the quality of the streams, and the standard decided upon by societies or individuals. In rivers where the trout rarely run large, the minimum length is often eight or nine inches. The maximum figure is upon the Thames, the trout of which are a special and most gallant variety; and here the limit fixed by bye-law is sixteen inches, representing a trout, in good condition, of about two pounds. A twelve-inch limit for trout and a ten-inch for grayling are generally considered a sportsmanlike standard. The average scale of the fishing clubs for other species are—Pike, 18 in.; perch, 8 in.; chub, carp, and bream, 10 in.; rudd and dace, 6 in.; tench, 8 in.; barbel, 13 in.; gudgeon, 4 in.; roach, 7 in.; bleak, 4 in.; pope, 4 in.

Literature—There is no English sport so rich in literature as angling, and it is of all qualities—theoretical and practical; idyllic and didactic; ranging over the entire watery world, domineering over whale and minnow with equal zest, and abounding with directions, occasionally, perchance, contradictory and impracticable, as to how to capture the fishes of sea and river. The magnitude of the angler's bookshelves has been indicated on a previous page, in the reference to Westwood and Satchell's *Bibliotheca Piscatoria*, a monument of painstaking research, careful compilation, and remarkable accuracy. In the thirteen years which have intervened since its issue by authors since deceased, many practical fishing books have been published, and it only remains in this article to specify the useful works by which the angler, in search of information to assist him in his sport, will be faithfully served. The poetry and lighter literature of angling we may leave for the reader's own discovery. It is not to be supposed that those processes of angling in its various branches, which have been briefly outlined in the foregoing pages, can be wholly learned from books, but the written page is a superstructure upon which experience will rise more rapidly and surely than would otherwise be the case. The following is a recommended selection:—

Fishing for Salmon—"Badminton Library"—*Salmon and Trout* (Longmans); *How to Tie Salmon Flies*, Captain Hale (Sampson Low); *The Salmon Fly*, G. M. Kelson (Wyman and Sons); *Rod and River*, Major Fisher (Bentley); *By Hook and by Crook*, Fraser Sandeman (Sotheran).

Trout and Grayling—*Floating Flies and How to Dress them;* and *Dry Fly Fishing in Theory and Practice*, F. M. Halford (Sampson Low); *Fly Fishing for Salmon, Trout and Grayling*, Dr. Hamilton (Sampson Low); *Fly Rods and Fly Tackle*, H. P. Wells (Sampson Low); *Practical Fly Fishing*, J. Beever (Methuen and Co.); *British Angling Flies*, Theakston, edited by F. M. Walbran (Sampson Low); *North Country Flies*, T. E. Pritt (Sampson Low); *The Fly Fisher's Entomology*, Alf. Ronalds (Longmans); *Favourite Flies* (America), Mary Orvis Marbury (Sampson Low); *The Angler and the Loop Rod*, David Webster (Blackwood).

General Angling—*A Book on Angling*, Francis Francis (Longmans); *The Book of the All-Round Angler*,

John Bickerdyke (Upcott Gill); "Badminton Library"—*Pike and Coarse Fish* (Longmans); *The Practical Fisherman*, J. H. Keene (Upcott Gill); *Angling, and How to Angle*, Burgess, edited by R. B. Marston (F. Warne and Co.); *Fish and Fishing*, J. J. Manley, M.A. (Sampson Low); *The Nottingham Style of Float Fishing and Spinning*, J. W. Martin (Sampson Low).

Monographs—*The Book of the Pike*, C. Pennell (Routledge); *Grayling and How to Catch Them*, F. M. Walbran (Angler Co.); *The Book of the Roach*, Greville Fennell (Sampson Low); *The Book of the Grayling*, T. E. Pritt (Goodall and Suddick); *The Book of the Black Bass*, Dr. Henshall (Clarke, Cincinnatti); *The Ouananiche*, E. T. D. Chambers (Harper Brothers).

Ichthyological—*Making a Fishery*, F. M. Halford (Horace Cox); *The Angler Naturalist*, C. Pennell (Routledge); *Salmon Problems*, Willis Bund (Sampson Low); *Habits of the Salmon*, Major Traherne (Chapman and Hall); *Domesticated Trout*, Livingston Stone (Osgood, Boston, U.S.); *The Angler's Paradise*, J. J. Armistead (Angler Co.); *The Practical Management of Fisheries*, Francis Francis (Horace Cox); *British and Irish Salmonidæ*, Dr. Day (Horace Cox); *Freshwater Fishes of Europe*, H. G. Seeley (Cassell); *British Freshwater Fishes*, Houghton (Dean); *British Sporting Fishes*, J. Watson (Chapman and Hall); *British Fishes*, Dr. Day (Horace Cox).

Fishing Haunts—*The Angler's Diary* (Horace Cox); *The Sportsman's Guide to Scotland* (Watson Lyall); *How and Where to Fish in Ireland*, Hi Regan (Sampson Low); *The Rod in India*, Thomas (Calcutta); *Norfolk Broads and Rivers*, G. C. Davies (Blackwood); *Travel and Trout in the Antipodes*, W. Senior (Chatto and Windus); *Near and Far*, W. Senior (Sampson Low); *Angling Travels in Norway*, Fraser Sandeman (Chapman and Hall).

Legal—*Oke's Fishery Laws*, and *the Freshwater Fishery Acts of* 1878 *and* 1884, J. W. Willis Bund (Butterworths); *A Treatise on the Law of Scotland relating to Rights of Fishing*, C. Stewart, second edition, edited by J. C. Shairp (Clark, Edinburgh); *Digest of the Irish Fisheries Acts*, Sir Thomas Brady (Eyre and Spottiswoode).

WILLIAM SENIOR.

COARSE FISH—So far as the so-called "coarse fish" are concerned, the art of angling has perhaps reached its highest level among those who frequent the lovely reaches of the Thames. Much persecution has rendered the fish of our premier river shy to a degree, and Thames anglers, being put on their mettle, now practise almost every known method of fishing with rod and line, and display an amount of skill which is not excelled on any river in the kingdom. To be a thorough Thames angler is to be one who can catch fish in almost any part of the world, though certain foreigners, such as the mahseer and tarpon, of course require different tackle from that used in English streams.

Any one who can successfully play a large Thames trout on quite fine tackle in a seething weirpool, will have no difficulty whatever in capturing salmon on the stouter gut which is commonly used for the king of British fishes; and even the art of dry-fly fishing may be acquired by practising on the dace which, in, alas! far fewer numbers than formerly, frequent the shallows of the lower portion of the river. The peculiar method of fishing followed by the anglers of the Trent—viz., of sending float-tackle a considerable distance down stream by running a fine silk line off the reel, is much practised on the Thames, and, as we have already said, there are no methods of fishing of any account which are unknown to the more successful among Thames fishermen.

Trout and **Pike** fishing will be found dealt with under separate headings, so we may well begin here with a description of Barbel fishing. Without having the dash and vigour of a trout, the **Barbel** (*Barbus vulgaris*) ranks among the strongest of fresh-water fish. Being caught commonly in places where the stream runs strongly, and, unless the water be thick, requiring fairly fine tackle in his capture, he gives more sport than perhaps any other fish in the Thames, the trout excepted. He spawns in the spring, and for a while afterwards, develops a most remarkable appetite, often taking the spinning bait

BARBEL.

of the trout fisher in the weirpools. However, by the time the angling season opens, which is about June 16th, he begins to feed on worms and other baits. Greaves, called "scratchings" on the Trent, gentles, and cheese, will all account for a barbel occasionally, and these fish are very fond of the caddis at the commencement of the season. They sometimes take a lampern in the autumn. But of all baits the worm stands first, and, perhaps, greaves come second.

When the water is very low and clear and the fish seem almost unapproachable, clever anglers occasionally make moderate captures of barbel by using a fine line and a small hook baited with gentles. They place a lump of stiff groundbait immediately above the hook; the few gentles on the hook then look as if they formed a portion of the neighbouring mass. This method cannot of course be used in the ordinary heavy barbel swims, but is more suitable to weirpools when the water is almost or quite shut off. **Clay-ball** fishing, as it is called, is very similar to this method, but can be practised in stronger streams. Clay into which gentles, greaves, or worms are worked is placed around a tiny cross piece of stick which is tied into the line just above the bait, or the stick is placed a foot or more above the bait and the gut below the stick is wound round and round the clay ball and squeezed into it. This arrangement if carefully made can be cast out like a leger.

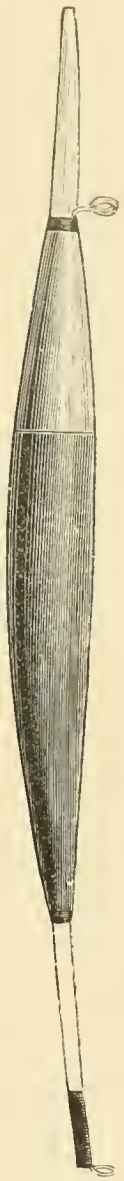
The barbel is a remarkably uncertain feeder; and to Izaak Walton's dictum that one can fish neither too early nor too late for him, there is nothing to be added. He is essentially a summer-feeding fish, and on the Thames the angler is most likely to meet with success after a fall of rain, particularly if the river is somewhat coloured. One of the most phenomenal takes of late years was made when there had been a long drought; the river had run low, and quantities of barbel had retired into a certain deep hole. Then came a freshet, the hole was fished, the fish fed eagerly and large numbers were taken.

Considerable care should be observed in choosing a barbel-rod. With coarse tackle, the rod may be fairly stiff, but the water presses heavily on a stout line and, the barbel being shy and fairly well educated, as fine a line as possible should be preferred. A fine line and a stiff rod spell catastrophe; for the weaker the tackle, the more occasion there is for suppleness in the rod. The favourite line on the Thames is smooth and softly dressed, of eight plait silk; and a leger is the most common form of tackle at the end of it. The Thames **leger** consists simply of about a yard of gut with a hook at the end; above it comes a foot of fine gimp on which is slung a bullet with a single shot so fixed on each end of the gimp as to prevent the bullet working on to the gut. Beyond the gimp may be still more gut, but this is not absolutely necessary. This tackle is cast out either off a Nottingham reel or in the Thames fashion in which the line is pulled off the reel and coiled on the floor of the punt before the cast is made. After the leger is cast out the angler awaits a couple of knocks or a steady pull and then strikes when, if the fish is large, he will encounter a determined resistance which is increased by the force of the water.

In most Thames barbel-swims, float-tackle is of little use, but in quieter waters, such as one finds in the Trent, and indeed in certain parts of the former river, heavy float tackle can be used with Nottingham tackle. Of this Nottingham fishing there are practically two kinds. The more common method consists in allowing a float to work down stream and draw line off the reel. Sometimes the float is cast out and held back. In this last-mentioned method, called "tight-corking," the shot has to be heavy enough to keep the bait on the bottom and the float must be at a greater distance from the bait than the water is deep. Practically, the tackle amounts to a leger with a float, shot taking the place of the bullet. It is a particularly deadly method of catching large roach and other fish when a river is in slight flood and the fish are feeding on the bottom. For "long-corking," except where many shot are required, the favourite float is a quill from the wing of some large bird. For "tight corking," cork floats are more often used.

Much success with the barbel is not to be obtained without a considerable expenditure of trouble and perhaps money in **ground-baiting** Several thousands of lobworms are usually placed in barbel-swims, either fixed in clay balls or thrown in loosely, or allowed to crawl into a sod of turf which is dropped into the river. Another plan is to place the worms with a stone or two in a paper bag, and sink the latter. The method to be adopted depends largely on the nature of the swim, local knowledge, and so forth.

The object of baiting is, perhaps, not so much to collect the fish as to get them accustomed to feed on a certain kind of food and to view it without suspicion. Their suspicions being lulled, they take the worm on the angler's hook for a time, but as soon as a few fish have been pricked and lost, or the swim becomes disturbed by other reasons, the effects of the ground-bait appear to wear off. Greaves and cheese should be used very sparingly as ground-bait, as they appear to sicken the fish, and lob-worms should be thrown in whole, otherwise the small fry will get them. It is judicious in an ordinary swim to throw in about 500 worms one morning, 300 twenty-four hours later, and fish it on the morning of the following day. While fishing, worms or pieces of worms should be thrown in from time to time, and the choicest and the best scoured should be selected for the hook. In large pools where barbel are plentiful, many more worms may be thrown in with advantage.



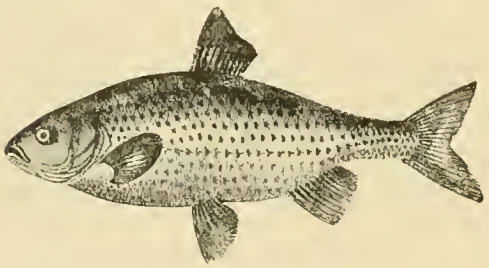
SLIDER FLOAT.

The **Roach** (*Leuciscus rutilus*) is of all fish the one which yields sport to the largest number of English anglers, and is beloved of the clubmen of both London and the Midlands. A bright, handsome fish, playing for a short time strongly if caught on fine tackle, it is shy to a degree in much-frequented waters. In winter, if properly cooked, it is by no means despicable as food.

In the commencement of the season, roach are found in the swiftest streams of a river where they probably go to become re-invigorated after the efforts of spawning. As summer advances,

they get into slightly deeper water, and wherever there is a nice, gravelly and sandy bottom, and weeds, reeds or rushes, they may be looked for. In winter, their swims depend largely on the state of the water and the temperature. If it is very cold, they seek the deepest waters, while if it is warm, they work out into streams of moderate depth. Thick water invariably sends them into shallow swims, which is a point to be remembered, while, when the river runs very clear and the frost is severe, they may be looked for in the deepest holes. Under ordinary "summer" conditions the best fish will be found in running water. All fish, it should be noted, rather favour eddies during a flood, for there food is swept and shelter is obtained from the strength of the current.

The baits for roach are simply unlimited in number and variety. There is hardly any kind of paste which they will not take, and they feed eagerly on wasp-grubs, gentles, the larvæ of all kinds of flies, and water insects, and are often caught on the silk weed. To grain, if stewed until it is tender, they are very partial in certain rivers,



ROACH.

and even in those waters where it is not regarded as a suitable bait the fish can be induced to feed on it by baiting up swims some days in advance.

The most common method of fishing for roach is with float-tackle, and this may be either used with a tight line, that is to say, the line being made fast to the end of a long rod, or with running tackle. Where rivers are shallow and it is desirable to be at some distance from the fish, there the Nottingham method of casting out a float and allowing it to travel with the stream is certainly the best, but in deeper waters where the fish cannot, it may be presumed, see the angler, there the tight line, or Lea method, accounts for the most considerable baskets of fish. Where roach are shy and much fished for, the angler cannot strike too quickly on perceiving a bite. It is obvious that with a tight line and the point of the rod held only a foot or two above the float, the strike can be made quicker than where the float has travelled ten or fifteen yards down stream; not only in the latter case has the elasticity of the line to be overcome, but there is a loss of time between the actual strike and its effect on the fish, during which the bait may be, and often is ejected.

On the Thames, the bank-angler commonly uses a long bamboo roach-pole and tight line; but large numbers of roach are caught from punts moored across the stream by means of poles called ripecks, the angler lowering the line over the side of the punt, letting the float travel three or four yards, then drawing it in and taking a fresh swim. While this is going on, the attendant will from time to time deposit balls of ground-bait over the side, which keeps the fish together and induces them to feed, *if* not given with a too lavish hand.

Roach-fishing is so largely practised, that many refinements of tackle are affected by the professors of the art, one of the most important of which is, in our opinion, the staining of the gut and the colouring of the hook shank. In winter the best colour for gut is brown, in summer, green to match the weeds, while the hook-shank should be coloured according to the bait; that is, if gentles are used, white or a very pale yellow; if wheat, wheat-colour; if worms, a brownish-red, and so on. These colours are easily made by mixing a little French polish with the dry colour obtained of the oil-and-colourman. The mixture will dry very quickly.

It is not every tackle-maker who sells roach-hooks mounted on sufficiently fine gut, for the houses which supply trout- and salmon-fishermen almost ignore this branch of their trade. To obtain the best roach tackle, it may therefore be necessary to go to the houses which are patronised by the London bank-anglers. As to the best shape of hook for roach, there is a diversity of opinion, many anglers preferring the "crystal" bend, while others declare there is nothing so good as the round bend. Silkworm gut is now drawn much finer than horsehair, but not a few anglers still swear by hair on account of its durability, absence of glitter, and for other reasons. A length of drawn gut will fray in the course of a day and, it is believed, is then more visible to the fish than the coarser horsehair, which may perhaps be taken by the fish for a piece of brown weed or some similar natural object.

Baits—To revert to the subject of **baits**—paste, gentles, and creed or stewed wheat, certainly take the highest rank, and it is a singular fact that in many rivers only small roach appear to prefer gentles while the larger fish are caught on wheat or paste. In the early part of the season, a red worm is sometimes found a good bait, and in certain waters, among which the Thames is not one, is regarded all through the year as even better than gentles or paste. In winter, the lobworm is one of the best baits that can be used, provided the water is slightly coloured.

In roach-fishing, ground-bait is all important, and it should be in nature somewhat similar

to the hook-bait. One of the best and most commonly used consists of the waste crusts from the bread pan scalded until they are quite soft, the water squeezed out of them, and kneaded into a stiff consistency with the addition of fine bran. To this may be added a little boiled rice, creed wheat, or other food which the roach favour. The amount to be put in depends on the extent of the river and the quantities of fish which are believed to be about. It is obvious that if there is only a shoal of fifty roach it is useless to throw in enough for two thousand. The fifty fish get gorged and refuse to be caught. One of the secrets of success in roach fishing is to put in a little ground-bait frequently and so induce the fish to keep looking about for food. To throw in a quantity of ground-bait at once simply gives them a big feast, after which they retire contentedly to some shady corner out of the way of hooks, floats, and anglers.

A great many roach are caught on the leger, such as described under the head of Barbel fishing, but it need hardly be said that for this fish the gut should be much lighter than that used for fighting the heavier tenants of the weirpool.

In some rivers, roach come on to the shallows during the summer and will take an artificial fly, particularly if the hook is tipped with a gentle. The fly should be allowed to sink and then be drawn slowly through the water, and the angler should not strike until he sees the line tighten, as the roach does not rise like a trout, but swims for some distance after the fly before sucking it in.

The **Rudd** (*Leuciscus erythrophthalmus*) closely resembles the roach in appearance, but it is rather deeper in the belly, has a tail more forked, and its red parts are more brightly coloured. A simple method of distinguishing the two fish is to examine the upper lip. This in the roach will be found capable of a slight elongation and can be pulled down, a convenience which evidently enables the fish to pick up food off the bottom. With the rudd, on the other hand, the upper lip is of a hard, bony, immovable nature.

Rudd are not now, so far as we know, found in the Thames, but are exceedingly plentiful in the waters of Norfolk, Suffolk, and Cambridgeshire, and in many ponds. They will take all the usual roach baits, but are particular favourites with the angler by reason of their readiness to seize (rather than to rise at) an artificial fly. Slapton Lea in Devonshire is a noted water for fly fishing for rudd. In hot weather shoals of these fish love to swim over muddy shallows, the bottom of which is paved with weedy verdure. Approach them cautiously and cast a fly in their midst, and the whole shoal will swim towards it, the largest after following it for a yard or two sucking it solemnly into its mouth. In some cases, skilful fly-fishers will, by exercising great care in their method of approaching and playing the fish they hook, kill half the shoal or more before the fish take alarm. Float-tackle, used when the fish are near the surface, should be cast a long distance, the angler keeping as low as possible.

The **Dace** (*Leuciscus vulgaris*), a bright silvery fish, slimmer in shape than, and lacking the red fins of, the roach. It is caught by much the same methods as its more corpulent cousin, but in addition rises like any trout to a fly in shallow waters, and the young would-be trout-fisher cannot do better than try his hand on these pretty fish. Almost any small fly will tempt them, and if they will not rise to the black gnat or other dark fly a bright Soldier Palmer, or white-winged Coachman should be tried. In some rivers, they commonly disdain a wet fly and are as a rule only to be caught with a carefully dried dun or other floating fly.

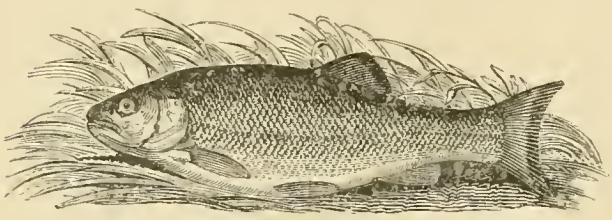
Some of the best dace fishing near London is to be obtained in the tidal waters of the

DACE.

Thames, where these fish abound. There, they are usually caught from punts, and it has become a common practice of late years to stir up the bottom behind the punt with a gudgeon rake. This proceeding disturbs various water-insects and slightly colours the water, and the fish, heading up stream towards the source of the discolouration, come upon the angler's tackle and are caught. Very large dace are often taken by the barbel-fisher, and are in fact regarded by him as a great nuisance. When it is found that there are continual bites which are being missed, and that the lobworm is being bruised about the head, the presence of dace may be at once suspected, and the way to clear the swim of a few is to bait with the head of the lobworm alone. Though dace are mainly a fish of the shallows, the larger members of the family are frequently caught in deep waters where their presence would not be suspected.

The **Chub** (*Leuciscus cephalus*) is another fly-taking fish, and though almost worthless as food and treated to words of opprobrium in many a trout stream, is beloved of Thames and other anglers for the fine sport he affords. Like many other fishes, he seeks the shallows at the commencement of the season after spawning, but soon retires to holes beneath overhanging willow trees, where any one peering cautiously over the bows of the boat or punt on some bright

sunny day may see a shoal swimming in and out the maze of roots which project into the water. There they lie the summer through, feeding on beetles and caterpillars and other insects which fall into the water from the overhanging branches. In much-navigated rivers, the fly cannot be used with great success except in early morning, because as soon as the first launch or boat has passed, the fish which are



CHUB.

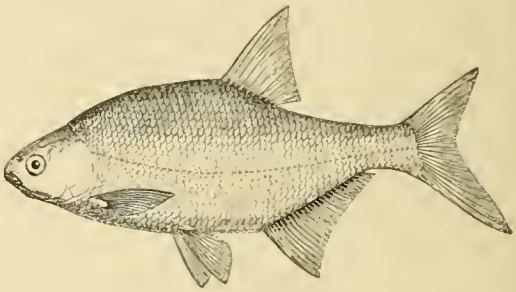
basking near the surface sink to a depth at which they disregard artificial flies. Still, there are many retired shallows and places in which chub may be found until the end of August, and there the fly-fisher still has his opportunity.

In fly-fishing from a boat, success depends as much upon the boatman as on the fly-fisher, the slightest roll of the craft or splash of the oars scaring the fish. The chub indeed is above all famous for his extreme distrust of man. If unaware of the angler's presence, he will take a bait presented to him on tackle of astonishing coarseness, but if he once obtains an inkling that his dread enemy is in the vicinity, no bait, however tasty, presented on the finest of tackle will tempt him. This, of course, as a general rule.

In addition to the flies, which should be large and dressed rather full and heavily hackled, small frogs, lobworms, a bunch of gentles, a piece of beef fat, crayfish-tails, and the large black slugs which come out at night after a showery day, are all placed before this fish by means of a fly-rod.

In deep holes, many a good chub is caught by means of leger-tackle, the bait being greaves or cheese, but perhaps the most general and successful method of angling for these fish is with Nottingham tackle. A large quill float, fairly heavily shotted, is sent by the side of the bank down stream right among a shoal of chub which, owing to the distance between them and the angler, are without suspicion. One of the most favoured summer baits is cheese-paste, while in the winter there is nothing to equal a piece of marrow or pith, previously scalded, from the spine of a bullock. The brains, which have also been scalded, are thrown in as ground-bait. The best line for this particular method of fishing is made of pure undressed silk, either twisted or plaited. The rod should be rather long and powerful to hold the fish from out those roots towards which he is certain to swim when hooked, and the whole proceeding must be conducted with the greatest care and caution. Not many chub are often caught from one spot, and the angler who tries place after place will catch many more than he who sits quietly waiting for the fish to come on the feed.

The **Bream** (*Abramis brama*) is a flat-sided, deep-bellied, hog-backed fish, which abounds in many Midland and East Anglian waters, and is also found in the Thames. Generally speaking, it is a night-feeder, and enormous numbers are caught between the hours of two or three, and five o'clock in the morning during the months of July and August. In the Thames, a few are caught in barbel swims, and these appear to feed during the day. They are taken with the leger, but in the slow-flowing rivers of the Fen country the favourite tackle consists of a rod somewhat akin to a hop-pole, a piece of twine, a float such as a Thames angler would use for jack, and what is commonly known as a "penny hook." The penny hook is tied immediately to the twine, and above the knot is a strip of lead, probably cut off the nearest gutter. With this very primitive tackle as many fish seem to be caught as with the finer gear used by the Thames anglers. But it is to be remembered that the rivers of the Midlands are more highly coloured than the Thames and Lea, and, as we have said, the fishing is carried out in the early morning when the light is not very good, circumstances under which fine tackle is not particularly called for. The float, too, is so arranged that at least a foot of the line lies on the bottom, and thus is but little observed. Even the worm may be more or less covered with mud, and has to



BREAM.

be routed up by the snouts of the fish. As a rule, bream-swims are heavily ground-baited, a favourite bait for this purpose being brewers' grains. The hook bait is usually a worm, but the fish will also take gentles, paste, and creed wheat.

So little do bream feed in the daytime on Midland rivers, that in some of them an angler might fish day by day for a year without dis-

covering that there was a bream in the river. The bream to which we are alluding are the large, bronzy fellows which grow to a considerable weight; but in the Norfolk broads and other waters there is a smaller fish of the same family called the **Bream-flat** (*Abramis blicca*), which is caught in immense numbers and rarely attains a considerable weight. We have taken these fish on paternoster, leger, and other tackle, and when well on the feed there appears to be no limit to the numbers which may be lifted into the boat.

The essentials of bream fishing, in short, are to fish at an exceedingly early hour in the morning, in fact before daybreak, to moor the punt in a bream-hole, to allow a portion of the line to lie on the bottom, to ground-bait sufficiently some twenty hours previously, and also during the fishing. Of course, the angler should be careful not to disturb the swim. That rule applies to fishing of all kinds.

The **Perch** (*Perca fluviatilis*), which may be instantly recognised by his striped sides, hog-back, and prickly dorsal fin, is one of the most sport-yielding, and at the same time best table,

PERCH.

fish found in fresh water. When large, he is by no means easily caught, but in the days of infancy he bites boldly and foolishly, particularly in ponds. Like the roach and some other coarse fish, he is found in the streams in spring and summer, retiring to deeper water in winter, the best time to make a large bag being when the river has been in flood and the water has sunk and cleared a little, and the fish have not yet left the large eddies in which they congregated to avoid the force of the current. If, added to these conditions, there are a few frosty nights to whet their appetites, the captures made are likely to be phenomenal.

In summer time, perch are scattered about the river, and the angler who understands how to use the paternoster will take one here and another there from among holes in the weeds, by the side of the camp sheathing, and near any old wreckage or timber work.

For large perch, there is no better bait than a live gudgeon, but minnows are more commonly used, perhaps because they are more easily obtained. On lakes and ponds, the red worm is very deadly; and in rivers, when the water is much coloured, there is no bait better than the worm. During a summer flood, if a shallow and not too swift swim is baited up with lobworms, good sport may be expected, and the tail of a lobworm is great medicine whenever the water is at all thick. When many anglers consider the Thames quite unfishable, owing to the thick water, there are a few who swim the tail of a lobworm round small eddies close to the bank, taking out a perch here and a perch there, and occasionally chub and roach. In lakes, perch sometimes take flies, such as a large red Palmer, and they will dash at small bright spinning baits at any time and in any water.

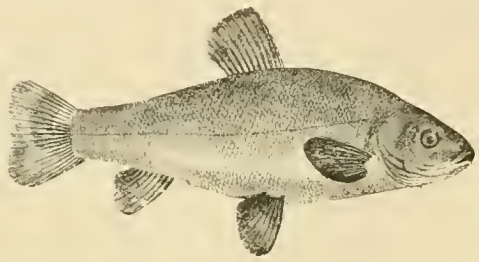
The **paternoster**, a piece of tackle rarely used for any other freshwater fish except perch, is to be made in the following manner: Take a three-yard length of fine gut and make two loops in it about eighteen inches apart, the lower one being only three inches above the end of the collar. To this lower end attach a pear-shaped lead of about half an ounce or less, the other end being fastened to the running line. Fasten to the large loops in the upright portion of the gut two No. 7 hooks, the gut of which should be shortened to about five inches. The paternoster is then ready and a very much better one than can be purchased in the shops. In rivers, this tackle is baited with minnows or gudgeons (these necessitate larger hooks) and shot rather than lowered into places where perch are expected. The rod should be held exceedingly steady, and immediately the little tap-tap at the point is felt, which denotes a perch, the point should be lowered for a second or two, then, if it be evident that the fish is feeding, there should be a gentle strike. For a perch of half a pound or upwards it is best to use a landing-net, as these fish have large and delicate mouths from which the hook often comes away in their struggles.

In ponds and lakes, the same tackle may be used, substituting worms for minnows, though minnows are preferable if they can be obtained. Where worms are the bait, it is as well to have a good supply and to throw in a few occasionally to keep the perch round about and on the feed. Almost the same float-tackle can be used for perch as for roach, except that it may be a trifle coarser, and the hook a little larger; but as regards the hook, this should always suit the bait in the matter of size.

If there is some place where perch are known to be and the fish are exceedingly shy and difficult to catch, it is a good plan to use the finest possible float-tackle, and to wait patiently till a perch takes it; and, as we have said, if worms are the bait, a few should be thrown in from time to time. We have known perch caught on leger-tackle in rivers when they could be taken by no other means, the bait being a gudgeon. The reason probably is that the gut of the leger lies on the ground and is not seen by the fish, whereas with float tackle or

a paternoster, a very visible line comes from the surface of the water to the bottom immediately over their heads.

Tench (*Tinca vulgaris*) may be easily known by their greenish-bronze colour, small bright red eyes, and minute scales covered with a thick,



TENCH

tenacious mucus. When of small size in ponds, they are easily caught with paste or worms, but when large, whether in rivers or ponds, they are, as a rule, shy to a degree, but bite well enough when the water is thick. In rivers they should be fished for carefully close to the edge of, but not on, a bank of mud from out of which grow water-lilies and other weeds, and if there is an old root or two about so much the better. They may be caught either on float- or leger-tackle or by the method termed "tight-corking," already described. They feed best in spring and early summer, but are sometimes taken in winter if the weather is mild and the water coloured. One secret of success is to use a small hook, thoroughly well covered with the bait, and give the fish plenty of time. Congealed blood is used as a bait with much success in some canals and other waters. With it, the strike should come sooner than with worms. Those who would catch large tench should be on the water soon after daybreak.

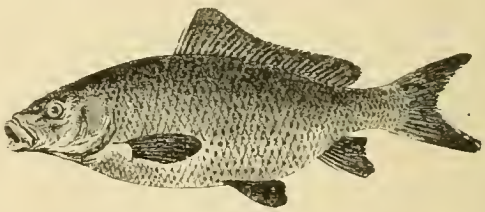
The **Carp** (*Cyprinus carpio*) is perhaps the shyest fish that swims. It is usually angled for during the summer, one of the best baits being a parboiled potato placed on a small triangle by means of a baiting needle. Paste sweetened with honey, worms of various kinds, boiled wheat, green peas, wasp-grubs, cheese, &c., are also used with varying success.

Carp are mostly caught in the very early morning or late evening. Ground-bait is essential, and it should resemble the hook bait but be coarser in character. In suitable places the leger answers well, as it is less visible to the fish than other tackle. But those anglers who can cast out a float a considerable distance use that form of tackle with much success in lakes. In enclosed waters, it is a good plan to bait up several spots and, after catching a fish from one, to go to another, so as to give the first swim a rest.

There are few baits which the **Eel** (*Anguilla vulgaris*) will not take, and few waters in which this valuable food fish is not found. The leger and ordinary float-tackle baited with worms are both much used. There is also a method called bobbing, or clod-fishing, which consists of stringing a number of big worms from end to end on a piece of worsted, looping them up into a lump resembling a small mop-head, and lowering them to the bottom by means of a cord and a short stout stick or bamboo. The eel's teeth catch in the worsted and the fish can be lifted up and dropped into a pail in the punt. Bobbing is much practised at the mouths of streams during a rise and discolouration of water.

On hot summer days when eels are lying in holes in banks, sniggling is practised. The sniggler takes a long needle, whips on a piece of fine line to the centre of it and inserts the needle in a worm, just bringing out the point which is stuck into the end of a stick. The needle encased in the worm is then placed in front of the eel's nose, and if it is taken and swallowed the sniggler puts on a gentle but continuous pressure until the eel's strength gives way and he is drawn out with the needle athwart his throat.

Eels are also caught in baskets which should be baited with live gudgeon. The best baskets are made of withies. We cannot recommend those constructed of wire. Thousands of eels are taken in fixed traps or weirs, and in eel-nets placed across the rivers of Norfolk and Suffolk. Spearing eels is very good fun. Sometimes the method is practised indiscriminately over mudbanks, or if the water is clear, the mud



CARP.

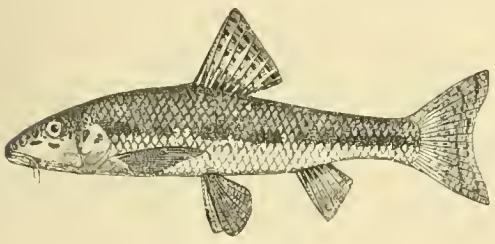
is prodded only where blow-holes are seen. In spring-time, the spear is used in the feathery green weeds, beloved of pike, which are seen in masses on the bottom of rivers.

The **Gudgeon** (*Gobio fluviatilis*) is a small, round-bodied, brown-backed fish, which abounds in many rivers and, as a general rule, is very easily caught. Like the barbel, which it somewhat resembles in shape, it is a summer-feeding fish, and is caught close to the bottom. Gudgeon fishing is largely carried on by Thames anglers and is highly favoured by the fair sex, provided some one of sterner mould is at hand to adjust the worm on the hook and remove the resulting fish.

For this branch of angling, fine roach tackle

is most suitable, but the hook should be very small and baited with a fragment of red worm or brandling. At the slightest depression of the float the angler should strike. Ground-bait is rarely used for gudgeon, the better plan being to disturb the bottom from time to time with a a heavy long-handled rake made for the purpose. It is important to plumb the depth and adjust the float with great accuracy. The bait should float down stream as near the bottom as possible without touching it. On the Thames, bags of twenty dozen or more of these fish are sometimes made by two rods in a day. As regards choosing a swim, the fish love a shallow over which the river flows gently, on the edge of a deep hole. As the summer wanes, they gradually get into deeper water. The bottom should be sandy gravel, *i.e.*, not too hard. As a table fish, gudgeon are most excellent, and they make first-rate baits for perch, pike, trout, and salmon.

There only now remain the small fry which are principally used for bait. **Bleak** (*Alburnus lucidus*), however, rise eagerly to a fly, and are



GUDGEON.

caught without difficulty by means of a single gentle, caddis, or piece of paste. They afford grand sport to the young angler during the summer, and, particularly if toughened in spirits of wine, or other preservative, are first-rate spinning baits if mounted on the Chapman spinner or one of its varieties.

The **Minnow** (*Leuciscus phoxinus*), a useful bait, is found in most brooks and rivers, and is best taken by means of a square or round net with fine meshes which is lowered to the bottom. As soon as the minnows swim over, it is rapidly lifted.

The **Stone Loach** (*Nemacheilus barbatula*), Colloch, or Colley bait of Ireland, is also a valuable bait, particularly for salmon and trout, and is usually caught by turning over the stone under which it lies. A tap with a hammer on the stone will sometimes stun it.

The **Ruffe** (*Acerina vulgaris*) or Pope is a kind of miniature perch. It is shaped like the perch, but has the colour of a gudgeon. It exudes a nasty slime, and has some poisonous spikes on the corner of its gill covers. It has a vexatious habit of swallowing the bait and hook.

The **Miller's Thumb** (*Cottus gobio*) is a quaint monstrosity, nearly all head. It is found under stones in the shallows of small brooks.

Of the **Stickleback** (*Gasterosteus spinulosus*), of which there are several varieties, little need be said. From the naturalist's point of view it is highly interesting as to its breeding habits, and urchins may be seen catching them any day by means of a red worm tied to the end of a piece of cotton. The greedy stickleback half swallows the worm and is lifted out before it has time to leave go.

The **Lamprey, Burbolt** or **Eel-Pout** the **Azurine**, the **Vendace**, the **Powan**, the **Gwyniad**, and the **Graining** are other rare fish, of a kind which do not as a rule afford sport to the angler.

(The **Flounder**, which is found indifferently in fresh and salt water, is dealt with under the head of **Sea-Fishing.**)

JOHN BICKERDYKE.

GLOSSARY.

Caddis—The larva of certain aquatic insects which reside in a self-constructed case or shell. A deadly bait for roach and some other fish.

Cast of Flies—The name given to the length of gut with the flies attached.

Coarse Fish—The term applied to all fresh-water fish with the exception of the *Salmonidæ*, the latter being termed *Game Fish*. If the distinction has reference to the mode of capture it is unsatisfactory, as the chub and dace at least give much sport with the fly.

Collar—The knotted length of gut to which are attached the flies. (Called also *Cast.*)

Flights—Combinations of hooks on gimp or gut. *See* PIKE, TROUT, &c.

Floats—Contrivances of cork, celluloid, horn, or quill, designed to keep the bait clear of the bottom, as well as to indicate to the angler when to strike. The sliding-float allows the free passage of the line through its rings until stopped by the lead or a rubber-band. The ordinary float lies flat on the water when there is insufficient weight below to keep it erect, but self-cocking floats are weighted with lead at the lower end.

Fly-Fishers' Club—A high-class social club for fly-fishers, founded in 1884 and having its headquarters at 8, Arundel Street. Hon. Sec., D. Wilson.

Gaff (otherwise **Cleek**, or **Gogger**)—A barbless steel hook, affixed to an ash handle and used in landing large fish. When not in use, the point is generally protected with a brass screw cap. Most modern patterns are collapsible.

Game Fish—*See* **Coarse Fish.**

Gimp—A line composed of a silk cord lapped with fine copper or other wire, and much used in the manufacture of traces and mounted hooks for pike-fishing.

Gorge-fishing—Virtually trolling with a dead bait on a double hook. [*See* PIKE.] It is illegal on the Thames.

Gut—A semi-transparent substance, manufactured from the silkworm. The insect is plunged in boiling vinegar, and its entrails drawn out. It is used either plain or stained in various tints to suit certain waters; and is usually sold in hanks of a hundred lengths (called in Ireland "hairs"), or made up in casts. *Drawn* gut, used in clear-water roach fishing, is drawn through steel plates. *Marrana* is a fine salmon-gut. The bulk of the supply is derived from Spain.

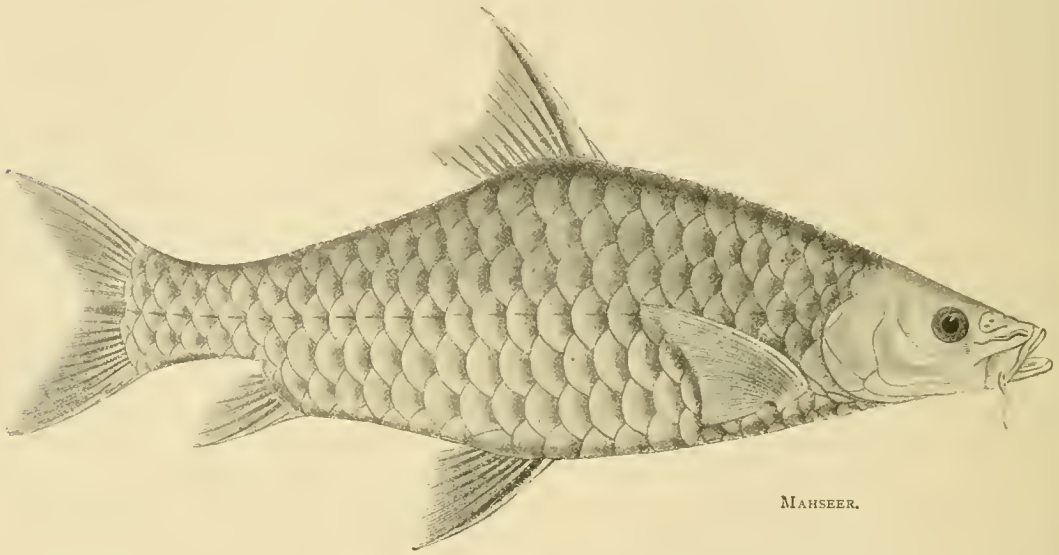
Hooks—Made in a large variety of patterns or, as they are called "bends," the chief being Limerick, Kirby, Round, Sneck, and Sproat. The two principal centres of the manufacture are Redditch and Kendal; and the makers in numbering their hooks work upon systems diametrically opposed, the Redditch scale being from 17 or 18, the smallest, up to 10/0, the largest; whereas, the

Kendal scale runs *vice versâ*, from 0/0 up to 20. For some fishing, notably live-baiting, two or even three hooks are lashed at the shank, and are known as *doubles* and *trebles*. *Eyed hooks* are those in which the shank ends in a loop, the latter being straight, upturned, or downturned.

Landing-net—A net on telescopic or other handle, used for the same purpose as the gaff, but in landing smaller fish. On salmon rivers where the gaff is prohibited, the fish are secured by landing-nets of the largest and strongest pattern.

Leger-Tackle—A tackle that takes its name from the lead, which is either coffin-shaped or a bullet: in either case pierced so that the line passes freely in the direction of the hook, its movement back towards the angler being checked finally by a split shot, which is too large to pass through the lead. Two derivations, each having reference to the fact that the whole weight of the lead rests on the ground, have been suggested, the one from the French *leger*, the other from the German *liegen* (to lie).

Priest—An implement used to give the fish its quietus.



MAHSEER.

Rank Hook—A hook of which the barb projects unusually.

Snap Tackle—A treble or double hook pike-tackle, in using which the angler strikes as soon as the bait is seized. [*See* PIKE.]

Swim—The term used for the length of water to which the angler's operations are for the time being confined, and over which, in bottom-fishing, his float is allowed to travel at each cast.

Trace—A length of gimp or other material to which are attached the lead and spring bait.

AMERICAN ANGLING—[*See* **Black Bass, Ouananiche, Tarpon,** &c.]

INDIAN ANGLING — **Mahseer** — The Mahseer (*Barbus tor*) the largest of the Carp family (*Cyprinidæ*), commonly running to fifty pounds in weight, and attaining as much as one hundred and fifty pounds, has its habitat only in large, rocky, mountain rivers. In such rivers, it is distributed throughout the continent of India, extending into Afghanistan, Chitral, Burmah, and China, and seemingly Japan also. It is the most sporting fish in the East, the violence of its first rush on feeling the restraint of the hook being phenomenal, and constituting a special difficulty in its capture. It does not take the bait, as a salmon or trout ordinarily does, leisurely rising and leisurely returning to its place, but with a sudden blow which takes the angler by surprise, and which will even jerk the salmon-rod out of his hands, if he is unprepared. And this blow is instantly followed by a violent rush to which the run of a salmon can bear no comparison. The rapidity of this rush is accounted for by measurements of the tail and fins as compared with the rest of the body of the fish, which show that the superficial areas of the propelling and directing powers amount together to as much as the superficial area of the whole of the rest of the Mahseer's body. The sudden jerk and violent rush make it necessary to fish for it with a thoroughly *pliable* salmon-rod, that will yield to the first rush more rapidly than it is possible for the angler's hand to do, to yield indeed before the effect of the blow has even reached the angler's hand, and so to allow the line to run out, but for which the strongest tackle that can be well used with a rod must be broken. The tackle too must be good and strong, and the running line, the same as for salmon, should be one hundred and fifty yards long. Other rushes also the Mahseer will make before he yields, but none such as his first for suddenness and rapidity.

Another peculiarity of the Mahseer is that, differing herein from most predatory fish, it has no teeth at all in its soft, leathery mouth. In lieu thereof, it is furnished with great muscular power of jaw, by means of which it can exercise such a violent power of compression, that its prey is stunned and squeezed lifeless at the moment of capture. This is noticeable in a fishing spoon, the size and thickness of an

ordinary dessert spoon, being crumpled up by it like a piece of paper. The spoons used must therefore be stout and strong, and the hooks of specially stout wire, not to resist tension, but to stand this violent power of compression. To produce the results it does, the Mahseer must also have a property very unusual in a fish, but with which we are familiar in the pad of the Tiger, of rigidifying the soft parts of the mouth at the moment of delivering its blow.

The smaller Mahseer can be taken with an artificial fly, the size of a salmon-fly, in the smaller tributaries, and in the shallows; but the best lure for the larger Mahseer is undoubtedly a small fish, or its imitation a spoon; and spoons are more used than any other bait, and of sizes varying from three-quarters of an inch to three inches in length, the general preference being for spoons one and three-quarters to two inches long. The three-inch spoon is used only in deep waters, for the rocky pools in which Mahseer delight are often twenty feet deep, and there the larger spoon shows best. The spoons must be mounted with treble hooks made of the specially strong wire above mentioned.

When the water is flood-coloured, Mahseer may be taken legering with a live bait at the bottom. In places where frogs abound, they are also taken with that lure, and if the place has been freely ground-baited, they may also be taken with parched grain bored to receive the hook. But this last style of fishing is only practised in special localities.

When rivers are coloured and chilled with melted snow-water, the Mahseer will take no bait. The best season in the South and on the West Coast is August, September, and October, when the rivers have cleared from the floods; while in Northern India it is, with exceptions, March and October.

In flood time, Mahseer migrate long distances up stream, ascending thousands of feet for the purpose of spawning at altitudes at which the water, though deep enough to hold the parent fish in flood time, will, by the time the spawn is hatched, have so dwindled that only tiny fry can stay in it, and the tiny fry will thus be safe from their larger predatory parents, which have meanwhile dropped down stream to their former habitats in the deeper rocky pools.

Rohu—The Rohu, Rahu, Rohi, or Rohita, as it is variously called in various localities, is the *Labeo rohita* of science, and may be taken as a typical specimen of the genus *Labeo*, of which genus there are twenty-five species. Of these, eight run large, attaining respectively to one and a half feet, two feet, three feet, and nearly five feet in length. The Rohu is distributed all over Northern India, attains three feet in length, is well known for its high edible qualities, and the excellent sport it shows, and it has been caught on the rod up to fifty-four pounds. As fry, it enters reservoirs through the river channels by which they are fed. The manner of its capture bears some similitude to roach-fishing, but the Rohu is as far above the roach in the nicety of skill required for its capture, in the play it shows when hooked, and in its flavour on the table, as it is in size. After ground-baiting for three days, it is fished for with a lump of paste bait from the size of the thumb-nail to the size of the end joint of the thumb, on a No. 1 Limerick hook, resting on the ground, the depth having been taken, and the float adjusted and re-adjusted with such careful accuracy, that the float neither lies down upon the water nor stands straight up, but is tilted so as to ride at an angle of about forty-five degrees with the surface of the water. The float, a special one, much more sensitive than anything used in roach-fishing, known in India as the Detective, is made of six inches of the stem of a peacock's tail feather, selecting the part that is one eighth of an inch thick, with a loop attached at the thin end only, half an inch at the top end is painted vermilion with oil colour, half an inch left white, and then again red and white alternately till there are three half-inch bands of red and two of white, the rest being left white. The rod too is a special one, much stronger than a roach-rod, but as light and rigid, made of what is called in the tackle trade "whole cane," though it is not cane, which is a ground-creeper, but bamboo, which is a grass. The bamboo is a special one known as the Ringol, or solid bamboo, and is ten feet long. If longer, the float would be too far off for the bites to be visible. The float is straight under the rod-top. The line is of single stout gut at the end, and no shot are put upon it, only a little soft lead wire is wound round the head of the hook, so that it will rest on the bottom, and be concealed by the bait. The running line has to be fine so that it shall not weight the very sensitive float. In the rains the Rohu bite so freely that any ordinary roach-float would suffice, and the stroke should be made as for roach. But when the periodical rains have passed, or where the Rohu have been much fished, they bite so subtly, that the bite of a ten- or twenty-pound fish would not be perceptible on an ordinary roach-float. With the Detective float the first sign of a bite is given by the float leaving the angle at which it rode, and standing upright, thus attracting close attention to the fine bite that is to follow. Then the float begins to move up and down, but so slowly and so slightly that the eye could not follow the movement but for the aid of the alternate bands of red and white. This may go on for minutes that seem hours, the float going gradually and very slowly deeper and deeper till it nearly goes under, but it is of no use to strike till there comes a *rapid* succession of small bobs, sometimes no more than a vibration or quiver, but *rapid*. Then is the critical second, and the stroke must be delivered instantaneously, or it will be too late, and the same fish will thus steal the bait ten or

twenty times, unless the angler is quick at the critical second. If he is, his reward is a fish that may be only two pounds, or may be twenty or thirty or more, and will make a good fight before it can be landed with so light a rod and tackle. The stolen bait serves to keep the fish round the angler, and when once the fish are collected the bites frequently follow each other in quick succession. But it nevertheless requires great quickness of eye and hand to make a good bag. One rod has been known to kill two hundred pounds weight in a day, from twenty-seven pounds and twenty-three pounds each downwards, the smallest being two pounds.

Kalbans—Kălbāns, the usual abbreviation of the more correct vernacular Kālăbāns, is *Labeo calbasu*, the scientific name having been incorrectly adopted from the vernacular. It is a thick, deep fish running to three feet in length, and certainly over twenty pounds in weight, found in the still waters of rivers throughout India; like the Rohu, getting as fry into reservoirs by the channels by which they are fed, flourishing there, and there fished for just like the Rohu. It adds to the sport that the bite of one is so like the bite of the other, that conjecture is busy as to which fish may be biting.

Mirgha—The Mirgha (*Cirrhina mrigala*) inhabits the same waters as the Kalbans, grows to the same size, and is fished for in precisely the same way, but is a more active fish in play.

White Carp—The White Carp (*Cirrhina cirrhosa*) grows to half the size of the Mirgha, but is otherwise similar, in locality, method of fishing, and activity.

Catla—The Catla (*Catla buchanani*,) a thick fish that attains six feet in length, has been caught with a rod up to one hundred pounds in weight, in the same localities, at the same time, employing the same baits and tackle, as for Rohu. It is much esteemed as food.

Carnatic Carp—The Carnatic Carp (*Barbus carnaticus*), though sometimes found in the runs, generally affects the stiller parts of the same rivers as support the Mahseer, though it also strays further into the plains away from the foot of the mountains, not being so dependent on rock for its food supplies. It attains twenty-five pounds, but is more ordinarily taken from two to seven or eight pounds. Swimming in shoals like dace, and rising to a fly in the same manner as they do, it affords excellent sport to the angler fishing with a fourteen feet double-handed trout-rod, casting three flies, the sizes of a medium and a small salmon-fly, and of a large loch-trout fly, on a collar of single salmon-gut. They are chiefly found in the deep eddies under the shade of the forest trees, whose leaves and flowers they largely feed upon. The larger take a small trout spoon readily. Space will not allow of the mention of several sorts of similar fish of which this one may be taken as a fair type in size, habitat, and manner of capture.

Chital—The Chital or Seetul (*Notopterus chitala*), which favours the larger rivers of Northern India, Burmah, and Siam, attains four feet in length. Silver sided, very flat and deep, it feeds on the bottom, but swims horizontally, and is a very game fish to the angler, leaping four feet into the air again and again on being hooked, and otherwise showing great activity. It has a very small head and mouth, the bait therefore must be small, and there is none better than its natural food the small mullet (*Mugil cascasia*), three and a half inches long, mounted on small trebles, and spun very slowly close to the bottom, where it may be allowed to rest from time to time. The bite of this large fish, which runs to eighty pounds, and is very commonly taken at twelve or sixteen pounds, is a very small nibble, which it needs a light hand to feel, and which must be answered immediately. It has a smaller congener in Southern India, *Notopterus kapirat*, which does not run over two pounds, and may be taken in the same way, or with prawn or worm.

Freshwater Sharks—Indian rivers supply many of these Siluroids, of which it will suffice to mention *Bagarius yarrellii*, *Silundia gangetica*, *Wallago attu*, which have no English synonyms, except that of Freshwater Sharks, and each of which attains six feet in length, and two other *Macrones* which run to much the same size. They feed mostly at the bottom, using their feelers as much as their eyes, and should be fished for with a live bait of about half a pound on a line weighted to the bottom, the hooks being such as would be used in England for Pike, mounted on stout gimp or wire, as these fish have very formidable teeth, and a grip so strong that it is very difficult to loosen when once they have closed on an object. For landing them, a gaff-hook is necessary. Though they offer strong resistance, taking out line with no denial, they display no great activity, and therein sink, as a game fish, to the low level of the Pike, though as regards size and teeth, they compare with him much as a tiger might with a cat. Space will not allow of the mention of the numerous species of lesser Siluroids with which the waters of the East abound.

Baril—There are several species of *Barilius*, running about the size of a hungry beck-trout, which are keen takers of a small trout fly, as many as seven dozen having been taken in a forenoon, but one of the genus Baril (*Barilius bola*) is said to attain five pounds in weight, but ordinarily runs to one and a half pounds, and swimming in shoals, as many as three have, on occasion, been taken at one cast on a collar of three flies the size of a loch-trout fly. Though not of the *Salmonidæ* they bear such a strong resemblance to a Trout, that they are commonly called the Indian Trout, and are held

A. Thorburn del.

Swan Electric Engraving

Sable Antelope

in very high esteem by the angler as a sporting fish.

Chilwa—The Chilwa (*Aspidoparia morar*), misnamed by science *Chela*, may be called the Indian Bleak. So small a fish (six inches) would not be mentioned, but for its extraordinary numbers and the rapidity with which it may be taken with a small fly, which make it very popular with some; forty, fifty, and even sixty having been taken in an hour by one rod with two flies up.

Bà-min and Begtie—These are sea fish entering estuaries, to be taken similarly, spinning as for Salmon, but with hooks mounted on gimp or wire.

The Bàmìn (*Polynemus tetradactylus*) attains six feet in length, and commonly runs from ten to twenty pounds, and is celebrated for the amount of tackle it breaks, on account of its extraordinary activity and strength. The Begtie (*Lates calcarifer*) runs over thirty pounds, and is much esteemed for food. It is known to Europeans as the Cock-up.

Megalops—*Megalops cyprinoides* is estuarial, but accommodates itself to fresh water in ponds, runs to a cubit in length, and may be taken with a white loch-fly or a trout-spoon. It is active.

Marral—The Marral (*Ophiocephalus marulius*) attains four feet; four other species of the same genus attain three feet. They are found in the still pools in rivers, and in ponds, are similar to the Pike in their habits, but are best taken at the surface with a live frog.

Hilsa—The Hilsa (*Clupea ilisha*) is far famed for its specially excellent flavour, and is said to take a white fly. But to treat of these, and Mangoe fish, and Mullets numerous, and Eels of sorts, and Gudgeon attaining a cubit in length and three pounds in weight, space will not allow.

H. S. Thomas.

ANTELOPES (Characters and Distribution of)—The term "Antelope" is so familiar to all, that it may be a matter of surprise to many to learn it is one totally incapable of definition. Nevertheless, this affords no reason for the rejection of the name, which, in its widest sense, is the most convenient collective title for a large and important group of Hollow-horned Ruminants coming under the designation neither of Oxen, Sheep, nor Goats. By zoologists, the Hollow-horned Ruminants, or *Bovidæ*, are divided into a number of sectional groups, or sub-families, one of which includes the Oxen, and a second the Sheep and Goats, while the others contain among them the various Antelopes and certain forms serving to connect the latter with the Goats. It is thus evident that the term "Antelope" has not the same zoological significance as Oxen, but comprises a number of more or less distinct groups ranking in the same grade as the latter. Some of the groups of Antelopes are, indeed, closely related to the Oxen—with which they are connected by means of the Anoa of Celebes—while others exhibit an equally intimate relationship with the Goats and Sheep.

In its widest acceptation, the term Antelope may, as already said, be taken to include all the members of the *Bovidæ* which are neither Oxen, Sheep, nor Goats. There is, however, an intermediate group connecting the more typical Antelopes with the Goats, and hence termed the Goat-like Antelopes. These are all mountain-dwelling forms, and include the Gorals (*Cemas*) and Serows (*Nemorhædus*) of Eastern Asia, the Himalayan Takin (*Budorcas*), the so-called Rocky Mountain Goat (*Haploceros*) of North America, and the European Chamois (*Rupicapra*);—the latter being the most Antelope-like of all. Eliminating these transitional forms—which constitute a sub-family (*Rupicaprinæ*) by themselves, ranking with the Oxen (*Bovinæ*) and Sheep and Goats (*Caprinæ*)—it is somewhat less difficult to give an approximate definition of Antelopes in a popular sense. True Antelopes, then, are Hollow-horned Ruminants, generally of more or less light and elegant build, and carrying the head raised considerably above the line of the back. Their horns—which may be present either in one or both sexes—differ greatly in relative size, but are quite different from those of either the Oxen or Sheep. As a rule they are more or less cylindrical, while they are frequently somewhat lyre-shaped, and are often ringed for a longer or shorter distance above the base. In most cases their direction is more or less upright; and in certain instances they are spirally twisted. A very general, although by no means universal, feature of Antelopes, is the presence of a gland beneath the eye; such glands being wanting in the Oxen and Goats, although present in most of the Sheep. More important is the circumstance that the bony cores supporting the horns of the Antelopes are nearly always solid throughout, whereas those of the other three groups are extensively hollowed internally. An important distinction between the Oxen (*Bovinæ*) on the one hand and the Sheep and Goats (*Caprinæ*) on the other is to be found in the structure of the upper molar teeth; those of the former being nearly square in section, whereas those of the latter are oblong. Among the Antelopes, both these types are to be met with, the Gemsbok and Sable Antelope group having Ox-like molars, whereas those of the Gazelles, Hartebeests, and Gnus are of the Goat-like form. Moreover, certain Antelopes, such as Eland and Koodoo, have a third type of molar structure; the crowns of these teeth being short—instead of tall—and thus resembling those of some of the Deer. These differences alone are sufficient to show that Antelopes in no sense form a single zoological group, but that they comprise a number of distinct groups which for many purposes it is convenient to brigade together

under a common designation. Consequently it will be manifest that no further attempt at a definition of the assemblage can be made.

Exclusive of the Goat-like group, these animals may be divided into the following seven sections, or sub-families, viz :—(1) *Bubalinæ*, Hartebeests and Gnus; (2) *Cephalophinæ*, Duikers and Four-horned Antelope; (3) *Neotraginæ*, Dik-diks, Steinboks, Grysbok, &c.; (4) *Cervicaprinæ*, Rhebok, Waterbuck, Rietbok, &c.; (5) *Antilopinæ*, Pallas, Saiga, Chiru, Gazelles, &c.; (6) *Hippotraginæ*, Sable Antelope Oryx, Addax, and their allies; (7) *Tragelaphinæ*, Nilgai, Harnessed Antelopes, Koodoo, and Eland.

The whole of the numerous Antelopes comprised in these seven groups are exclusively confined to the Old World, while the great majority are restricted to Africa south of the northern tropic, or at least to Africa with Syria and Arabia. The first section, for instance, has no representatives beyond the countries named, and it is indeed only one species of Hartebeest that is even found beyond Africa, the Gnus being restricted to those portions of that continent lying south of the northern tropic. In the second section, the Four-horned Antelope is Indian, whereas all the numerous species of Duikers (*Cephalophus*) are restricted to Africa south of the Sahara. The members of the third section—all of which are small-sized creatures—are absolutely confined to the area last named; and none of the fourth section (*Cervicaprinæ*) extend their range beyond the same limits. Skipping section (5), it will be found that most of the members of the *Hippotraginæ* inhabit Ethiopian Africa (as that part of the continent lying to the south of the northern tropic is called), although the Addax is found in Northern Africa and Arabia, and the Beatrix Antelope (*Oryx beatrix*) inhabits the latter country, and is said, indeed, to range as far as Bushire. Both the groups enjoying this wider range are desert-haunting forms. In the sixth section, the Nilgai (*Boselaphus*) alone is Indian, all the other forms being Ethiopian. Reverting to the fifth section, or *Antilopinæ*, we find this the most widely spread of all; most of its representatives being inhabitants of more or less desert districts. Indeed, the only exclusively Ethiopian genus in this group is the one containing the Pallas (*Æpyceros*). Of the others, the one species of *Saiga* is confined to the steppes of Central Asia, the Chiru, which alone represents *Panthalops*, inhabits the highlands of Tibet, while the Blackbuck, forming the sole member of the now restricted genus *Antilope*, has its home on the plains of India. Of the Gazelles, the typical genus *Gazella* has the widest distribution of all the Antelopes, ranging from South Africa (where it is represented by the Springbok) through the eastern and northern districts of the same continent, to Syria, Arabia, Asia Minor, Persia, Baluchistan, northern India, Afghanistan, and Mongolia. Probably this wide distribution is to be accounted for by the desert-frequenting habits of most Gazelles, which has enabled them to traverse districts impassable to the majority of their kindred. The more aberrant Gazelles, such as the Gerenuk (*Lithocranius*), Clarke's Antelope (*Ammodorcas*), and the smaller Beira (*Dorcatragus*), are, however, exclusively confined to Eastern Ethiopia.

It will thus be apparent that by far the great majority of Antelopes are Ethiopian (including in this designation part of Arabia), and indeed, with the exception of the Gazelles the only true Antelopes found elsewhere than Africa, Syria, and Arabia, are the Indian Four-horned Antelope, Blackbuck, and Nilgai, the Tartarian Saiga, and the Thibetan Chiru. Most noteworthy is the circumstance that no true Antelopes are to be found in the countries lying to the eastward of the Bay of Bengal; although Goat-like Antelopes of the genera *Cemas* and *Nemorhædus* range into Burma, China, Japan, &c.

Ethiopian Africa thus being pre-eminently the headquarters of the true Antelopes, it is curious to find that at no very distant epoch of the earth's history many extinct species closely allied to modern African types inhabited India, Persia, Greece, and Hungary. Hence it is evident that there has been a great southern migration of the Antelopes; while it is probable that the entrance of the group into Africa is a comparatively recent event. Possibly the original northern forms may have been suited only to a comparatively dry climate, which would account for their never having been able to effect an entrance into the Malayan countries; but it is extremely difficult to discover any adequate reason for the extinction in India of nearly all its original inhabitants belonging to this group.

Be this as it may, it is evident that when the original migrants from the north (which were probably comparatively few in species) succeeded in establishing themselves in Ethiopian Africa, they found a country so eminently suited to their requirements, that they increased, alike in number and in the development of generic and specific types, in a manner unparalleled in any other part of the world. Although it is quite probable that Antelopes were originally inhabitants of open and comparatively dry districts, their Ethiopian descendants have developed the capacity of adapting themselves to stations of every kind. Whereas the Gemsbok and other members of the genus *Oryx*, together with the Gazelles, and many of the Hartebeests, are still inhabitants of open and more or less desert districts, the Waterbuck, Lechive, and other species of *Cobus*, as well as the Sitatunga and others of the Harnessed Antelopes (*Tragelaphus*), delight to dwell among the reeds fringing the banks of rivers and swamps, or even to stand neck-

deep in the water of lakes. Some members of the latter group inhabit the steaming tropical forests of the Congo valley, and in Senegambia it seems not improbable that the Derbian Eland is a forest animal. Not only are the plains tenanted by their special denizens, but the mountains have been invaded by forms like the Klipspringer and Rhebok, which rival, or excel, the Chamois in their jumping powers. Structural peculiarities have accompanied their adaptations, the Klipspringer having its hoofs short and rounded like those of a Goat, whereas those of the Sitatunga are enormously elongated. As regards food, too, Antelopes seem capable of great adaptations; since whereas most kinds live on grass, a Steinbok inhabiting two small islands near Zanzibar lives entirely on leaves and twigs.

At the present day, Africa is undoubtedly the paradise of Antelopes, but it is very doubtful if this would ever have been the case had Deer succeeded in penetrating south of the Sahara. Why Antelopes reached Ethiopia, while Deer were kept out, we shall probably never know.

R. LYDEKKER.

ANTELOPE SHOOTING. **Europe and Asia**—Antelope shooting in various forms is to be obtained in many parts of the world, but it may be said with truth that the natural home of this family lies in Africa, and especially in **South Africa.** Here, magnificent sport is still to be had with antelopes ranging in size from the Eland, whose stature exceeds that of a stall ox, down to the tiny Blue Buck, which is scarcely larger than a good hare. In Europe, the chase of the Chamois, which is stalked or driven among the difficult mountains of the Alps, is well known. In the Caucasus and Mongolia, the wary **Djerán** (*Gazella gutturosa*) is occasionally stalked, but more often coursed with greyhounds upon the great steppes. The curious **Saiga** (*Saiga tartarica*), with its hideous swollen-looking nose, is a denizen of South Russia and the Central Asian steppes; it is nowhere abundant and has seldom fallen to the rifles of English sportsmen. The **Thibetan antelope** (*Pantholops hodgsoni*) is another rare species, hitherto seldom obtained by Europeans, found among hills and valleys beyond the northern frontiers of India and in Turkestan. It carries handsome horns, strongly annulated; the best measurement hitherto obtained is 27⅞ inches. In India itself, the well known **Blackbuck** (*Antilope cervicapra*), whose characteristic horns are perhaps more familiar than those of any of the smaller antelopes in European collections, is to be found, often in large numbers, in suitable localities from the north to the south of the country, on wide, open plains or in grassy places near the banks of rivers. Among English sportsmen it is almost invariably pursued by stalking, and affords excellent sport. The natives hunt it occasionally with the Cheetah, and at other times stalk it by aid of trained bullocks or with a bullock cart. The average weight of a Blackbuck is about 85 lbs.; the longest horn measurement hitherto recorded 28¼ inches—straight measurement. The **Nilgai** (*Boselaphus tragocamelus*), which is now usually included among the tragelaphine groups of antelopes, is a large and somewhat odd-looking beast, found in level country varied by bush and light jungle, in many parts of India. As beasts of chase Nilgai are not looked upon with much favour; they can be pretty easily shot, and natives in many localities have a strong prejudice against their being destroyed.

A good blue-bull, as the male of the Nilgai is called, stands from 4 feet 4 inches to 4 feet 6 inches at the shoulder. The horns are short

BLACKBUCK.
Ht. at shoulder, 32 in Av. horn meas. 22 in.
Max. horn meas. 40¾ in.

and ox-like, and the best recorded measurement is 9¼ inches. The **Four-horned** Antelope, or **Charsingha** (*Tetraceros quadricornis*), is found sparingly in many parts of India in bush, jungle, and grassy covert. It is a small antelope, and lies very close in covert, and is more often than not snapped with the shot gun, as are the smaller bush-loving antelopes of Africa.

The **Indian Gazelle**, commonly known as the **Ravine deer** (*Gazella bennetti*), is found in ravines and among rocky hills and scrub in many parts of India, Beluchistan and Southern Persia. It carries nice horns measuring from 10 to 14 inches in length and, although sly and wary, can be stalked successfully by the careful gunner. Camels and shooting-horses are occasionally employed to aid the sportsman in his operations with this antelope. [*See* CHICKARA.] The **Thibetan Ravine deer** (*Gazella picticaudata*), found in Mongolia and Western Thibet, is an animal

strongly resembling the last-named species, and of much the same habits.

Among Indian antelopes, one can scarcely pass over the mountain-loving **Goral**, or Himalayan Chamois (*Nemorhœdus goral*), and the

RAVINE DEER.
Ht. at shoulder, 26 in. Av. horn meas. 9 in. Max. horn meas. 14¼ in.

Himalayan **Serow** (*Nemorhœdus bubalinus*), goat-like antelopes, which afford excellent mountain stalking. Closely allied to the last-named is the Serow of Sumatra (*N. sumatrensis*), found, as its name implies, among the hills of Sumatra, as well as on the mainland.

Gazelle Stalking—The true desert-loving gazelles, which include many species, enjoy a wide range from Persia and Central Asia to Arabia and North Africa. Chief among these may be named the Dorcas, Atlas, Arabian, Persian, Isabella, and Sœmmering's gazelles; *Gazella dama*, *G. rubifrons*, and the Addra gazelle. The Somali lowland gazelle (*G. spekei*) is remarkable for a curious bulging skin formation upon the nose, which easily distinguishes it. The Somali Plateau gazelle bears a strong resemblance to the last-named, but lacks the nasal peculiarity. Grant's gazelle, carrying very beautiful horns extending to 30 inches in length; Clarke's gazelle, remarkable for its long, slender, giraffe-like neck; and Thomson's and Waller's gazelles are all very handsome forms discovered in East and North-East Africa within recent years. All these gazelles are only to be stalked and secured at somewhat long ranges by accurate rifle-shooting. Some of them, in countries where they have been much shot at, are almost unapproachable. Occasionally patches of bush or isolated thorn trees may be made use of in approaching these wary plain-dwellers, but it must be admitted that, as a rule, stalking gazelles upon open flats, under a burning sun, is extremely trying work for the sportsman. By the aid of natives, it is sometimes possible to conduct driving operations, and to push the game within shot of the gunner lying concealed; and occasionally the old South African Bushman plan is resorted to, and, arrayed as an ostrich, the European sportsman is enabled to get right among troops of gazelle and other game and shoot what he requires. This last is an exceedingly deadly method, but the gunner has first to obtain a complete skin, head, and neck of an ostrich, and great care has to be exercised in approaching in a natural and ostrich-like manner and in taking advantage of the wind, which, if blowing from the direction of the stalker, would at once betray him. For gazelle shooting a ·450 or ·303 rifle is the best weapon that can be employed, and as few shots are obtained at less than 200 yards, it is a matter of vital importance that the sighting be adjusted with extreme care and accuracy.

South African Shooting—In South Africa, where during immemorial ages vast numbers of antelopes of many and remarkable species must have wandered and fed in undisturbed possession, much of the game has, as in other parts of the world, been shot off. Yet much still remains. South of the Zambesi, some thirty species of antelope are still to be found; many of them near the southern littoral, others in far, remote places where they are difficult of access. The **Eland**, the largest antelope in the world [*see* ELAND], is now somewhat scarce in South Africa. The **Sable** and **Roan** antelopes (*Hippotragus niger* and *H. equinus*), two of the most magnificent forms in the African Continent, are to be met with in North Matabeleland, Mashonaland, and thence to the East Coast, sparingly in Khama's country, and thence northward beyond the Zambesi. One of the great advantages of hunting in South Africa—although it is, too, answerable for much of the rapid disappearance of the fauna—is the fact that horses can be always, or nearly always, employed (except towards the East Coast, where the Tse-Tse fly abounds), in pursuing the larger antelopes and heavy game. A ·450 or ·500 rifle, or the old sporting Martini-Henry—still one of the most useful of all weapons—is usually employed in shooting the larger South African antelopes. Of late the ·303 has been used, and although differences of opinion have arisen as to its merits, Mr. F. C. Selous and other well-known hunters speak of its results in terms of satisfaction. The sable and roan antelopes are usually found in semi-bushy country, or among the lower slopes of hills and kopjes. Sables run in troops of from a dozen to fifty; Roan antelopes in small bands of from six to fourteen. Both of these great antelopes are possessed of considerable speed and staying

power, although they can occasionally be run down on horseback. The magnificent horns of the Sable antelope, scimitar-shaped and strongly annulated, form one of the greatest prizes of the hunter in South Africa. The Roan antelope has horns of a somewhat similar character, but shorter and thicker in growth. It ought to be remembered in approaching wounded individuals of these antelopes, that both are extremely savage, and, unless completely disabled, will charge desperately. Many a good dog has been killed by the deadly sweep of a Sable or Roan antelope's horns. A good Sable antelope bull will stand 4 ft. 6 in. at the withers and carry horns measuring 45 in. over the curve. A Roan antelope averages two or three inches more in height, but bears horns which lack the magnificent sweep of the Sable's and seldom exceed 32 inches over the curve.

It should be borne in mind in shooting antelopes, and especially the larger African

SABLE ANTELOPE.
Ht. at shoulder, 54 *in.* *Av. horn meas.* (*male*), 40 *in.*
Max. horn meas. 46 *in.*

antelopes, that they are possessed of immense vitality, and will often run clean away from the hunter after having received wounds that to the casual observer would inevitably signify immediate collapse. Even with a bullet through the heart or lungs, an antelope will succeed sometimes in making good its escape. The writer has spoored for miles a blue wildebeest bull, which had been shot clean through the lung with a Martini-Henry bullet, and then had to abandon the pursuit to a Bushman tracker. As few Europeans, unless they have spent many years in the pursuit of great game, are equal to the science of spooring, it is necessary to have at hand a native or two, preferably Bushmen if they can be obtained, who will find and track game and will take up the spoor of animals when wounded. Many a good head of game has been lost for want of a native spoorer.

The **Koodoo**, one of the biggest and noblest of the African Antelopes, is noticed elsewhere [*see* KOODOO], as are the **Gemsbuck** [*see* ORYX] and the black and blue **Wildebeest** [*see* GNU]. The **Hartebeest** is one of the most characteristic of the Ethiopian group of Antelopes, and is represented in South Africa by the Cape hartebeest (*Bubalis caama*) and Lichtenstein's hartebeest (*B. lichtensteini*). In East and North-East Africa are to be found Jackson's hartebeest (*B. jacksoni*), the Tora hartebeest (*B. tora*), Swayne's hartebeest (*B. swaynei*), Cooke's hartebeest (*B. cookei*), and the Senegal and Koba hartebeests (*B. senegalensis* and *B. koba*), which two last are found indifferently in East and West Africa. Besides these forms we have the West African hartebeest (*B. major*) which is only met with in West Africa. All these hartebeests have a strong family resemblance, although there are slight differences in colour, habits, and the shape of the horns. They are all characterised by speed, staying powers, and vitality, so that even when severely wounded they will not unfrequently make good their escape. It is useless attempting to run down a hartebeest, or its near cousin the Tsesseby, in tail-on-end chase. Such an attempt is sufficient to break the heart of the stoutest horse, and, indeed, the writer has seen a good African shooting pony which succumbed from nothing but the effects of a desperate gallop after hartebeest. The Cape hartebeest—often called by the Boers the Rooi (or red) hartebeest—stands about 4 feet at the withers, and has, like most of its kin, very drooping quarters. Its colour is of a reddish-brown, darker upon the back, shoulders, and fore legs. The face is black and extremely long, giving the animal a quaint, old-fashioned expression, while the rugged horns are perched upon an extremely high frontal bone. It is still common in Bechuanaland, the Kalahari, Great Namaqualand, and about the Botletli River, in Ngamiland. It runs in good sized troops, varying from twelve or fifteen to fifty and occasionally even more. It is found indifferently in open, park-like forest country, or upon grassy plains.

These animals, although shy and suspicious, are yet occasionally very stupid. They have a habit of wheeling round and halting in the middle of a run and the mounted hunter can thus often dismount and obtain a fair shot. They are obstinate, too, in sticking to a particular line of flight, and the writer has more than once cut a troop in half in this way and secured an easy shot. They can be turned from their course, as can other South African antelopes, by firing a bullet or two over their heads so as to strike the ground in front of them; and if the leader of the troop can be wounded and turned out, the rest will often become bewildered and afford easy shooting. If it were not for these

weak points, the hartebeest would be one of the most difficult of all animals to bring to bag. As it is, it is by no means one of the easiest. Lichtenstein's hartebeest is found in Mashonaland, Gazaland, Portuguese South-East Africa, and thence northward into East Africa. Its habits are very similar to those of *Bubalis caama*.

The **Tsesseby** (*Bubalis lunatus*) is a handsome antelope, averaging in height close on four feet, nearly related to the hartebeest and greatly resembling that antelope in appearance and colouring. The horns, which are crescent shaped, differ, however, a good deal from those of the Cape hartebeest. At the present day the Tsesseby is most plentiful in Mashonaland, Nganiland, and in South-East Africa between the Pungwe and Jambesi rivers. It is the swiftest and most enduring of all antelopes, which is saying a good deal; yet, thanks to the characteristics which have been pointed out in the case of its near congener the hartebeest, it is often brought to bag. **Hunters' Antelope** (*Bubalis hunteri*) is a species lately discovered in East Africa, also related to the hartebeest. The horns are, however, much more prolonged and extend in length to 26¼ inches. Up to the present this antelope has been chiefly found on the Tana River in East Africa.

An extremely interesting group of animals to the sportsman are the water-loving antelopes, which include the **Lechwe** (*Cobus leché*), the **Pookoo** (*C. vardoni*), the **Sitatunga**, or Speke's antelope (*Tragelaphus spekei*), the **Inyala** (*T. angasi*), the **Reedbuck** (*Cervicapra arundineum*), **Penrice's Waterbuck** (*Cobus*

WATERBUCK.
Ht. at shoulder, 48 *in. Av. horn meas.* 20 *in. Max. horn meas.* 33½ *in.*

penricei), and the **True Waterbuck** (*C. ellipsiprymnus*), all of which are found in South or South Central Africa. The **Sing-Sing** (*C. defassus*) is an East African form of the large waterbuck, while the White-eared Waterbuck (*C. leucotis*) and another form *Cobus kob* are smaller antelopes found in Central and East

PALLAH.
Ht. at shoulder, 36 *in. Av. horn meas.* 20 *in. Max. horn meas.* 27½ *in.*

Africa. Of these animals, the True Waterbuck, the Lechwe, the Reedbuck, and the Sing-sing are best known to hunters. The Pookoo is scarce and restricted as to habitat, while the Sitatunga, although flourishing in large numbers in the swamps and reedbeds of the river systems of the interior, is extremely difficult of approach and seldom falls to the rifle. In South Africa, the Waterbuck, the Lechwe, and the Reedbuck all afford excellent rifle-shooting on the river systems beyond the Vaal. Penrice's Waterbuck, a new species, has only lately been discovered by Mr. G. Penrice in the country behind Benguella, Portuguese West Africa. It is a handsome antelope, differing only slightly from the Sing-Sing and the South African Waterbuck. The Inyala, a form between the Bushbuck and the Koodoo, frequents the rivers and swamps of South-East Africa, and is extremely local. It may still be found in the neighbourhood of Delagoa Bay, and is well worthy of the hunter's labours.

The **Pallah**, or **Impala** (*Æpyceros melampus*), is an extremely elegant antelope, bearing peculiarly characteristic horns, which differ from most other species; and it is to be met with in considerable troops from the Limpopo River northwards into East Africa, in bushy and forest country, upon the borders of such of the river systems as are not surrounded by swamps.

Where it has not been much disturbed, the beautiful Pallah roams in large numbers, as many as eighty or a hundred in a troop. Thanks to the nature of its habitat, where covert is abundant, it is not a difficult antelope to shoot. In height the Pallah stands slightly under three feet, while representative horns range from twenty to twenty-seven inches over the curve.

Three small antelopes which give very excellent mountain shooting in South Africa are the **Klipspringer** (*Oreotragus saltator*), the **Vaal, or Grey, Rhebok** (*Pelea capreola*), and the **Red Rhebok** (*Cervicapra lalandi*). These antelopes frequent many of the mountain ranges of South Africa, and afford admirable shooting with the rifle. The **Klipspringer** is found as far north as Abyssinia. It is a very charming and astonishingly active little mountaineer, and well deserves its title, "Chamois of Africa."

The well-known **Springbuck** (*Gazella euchore*) is happily still abundant in many parts of South Africa, from the Karroos of Cape Colony to Ngamiland, and even Benguella on the West Coast. This fleet, active, and characteristic antelope affords some of the best stalking in South Africa. It can be driven by approaching in line *downwind*, when it invariably takes upwind and can be cut off by gunners mounted or in carts; or it can be quietly approached by slowly walking a horse until within four hundred yards and then dismounting and sidling in for a shot. Very accurate shooting is, however, required for the springbuck, which is seldom bagged nowadays at less than three hundred yards range. The **Blesbok** and **Bontebok** (*Damalis albifrons* and *D. pygargus*) are two very handsome and remarkable antelopes, which formerly thronged the plains of South Africa, but are now only to be found preserved on a few farms. As game animals they may be considered, unfortunately, almost extinct.

The **Bushbucks** (*Tragelaphus*), **Steinbuck** (*Nanotragus campestris*), **Oribi** (*N. scoparia*), **Grysbuck** (*N. melanotis*), **Duiker** (*Cephalophus grimmi*), **Natal Redbuck** (*C. natalensis*), and **Bluebuck** (*C. monticola*) are small antelopes, which in many parts of Africa are to be obtained, principally amid bush and thickets, or, in the case of the Steinbuck and Oribi, on grassy plains. As a rule, most of these antelopes fall to the shot gun. They are often bagged when the gunner is in pursuit of feathered game. In the thick bush fringing the littoral of Cape Colony, big drives are organised, in which large numbers of bushbuck and bluebuck are secured. The **Harnessed Bushbuck** (*Tragelaphus scriptus*), a very beautiful form of bushbuck, is found upon the banks of the river systems of South-Central, East, and West Africa, from the Limpopo northwards, and is a prize that any sportsman may well be proud of.

North America—Turning to North America we find but two antelopes to make note of. Of these, the well-known **Pronghorn** (*Antilocapra americana*) has become so scarce as to be now hardly accessible as a beast of chase; while the singular **Rocky Mountain Goat** (*Haploceros montanus*), an excellent quarry for those fond of the most arduous and difficult mountain shooting, may be classed among the goats almost as

ROCKY MOUNTAIN GOAT.
Ht. at shoulder, 35⅝ in. Av. horn meas. (male) 8 in. Max. horn meas. 11½ in.

much as among the antelopes. Perhaps the best ground at the present day for Rocky Mountain goat is among the snow- and ice-covered ranges of Alaska.

H. A. BRYDEN.

ANTELOPE COURSING—The common Indian Antelope (*Antilope cervicapra*) is so fleet of foot, that it is ordinarily held to be useless to slip greyhounds after it. Even two greyhounds held in leash, the second to take up the running when the first was distressed, have been known to be successively exhausted by one antelope with apparent ease, aided though they were by two riders similarly riding alternately. On soft ground, however, after rain, the pointed hoofs of the antelope sink so that a single greyhound will pull down the fleetest of them. Aware of this, the antelope, if surprised among cultivation, where the fields are divided by ridges, will keep to the hard dry ridges, however rectangular, never cutting a corner across the plough, though the hound be within a stride, and therein showing its wisdom, makes good its escape. But even on hard ground, a fawn well selected from the herd by a practised eye as young enough may be run down if well ridden to. When the herd see the hounds closing up to a fawn, they circle round and cut in between the fawn and the hounds, and dally with them to lead them off. Then the riders must be close up, so as to be able to call off the hounds and lay them on to the fawn again. The herd will

repeat the manœuvre again and again. A fawn so young that it had milk in its stomach took a field of well-mounted men with five deerhounds ten miles at such speed that all the hounds were exhausted, and all the horses but two, which only continued the chase by being ridden and saved alternately.

ANTELOPE SNARING—In India antelope snaring is practised in the rutting season after the following method. A tame buck antelope, his horns dressed with nooses, is led in sight of the herd. His instinct prompts him to join the does, a move resented by the black buck of the herd. A fierce combat ensues, in the course of which the horns may become so entangled, that both eventually fall exhausted and in such plight are easily secured.

ARCHERY—The practice of Archery can be traced back to very ancient times, though authorities differ as to when the use of the bow first became common in England. The many statutes for the encouragement and directing of the practice of Archery, the provisions made by them that practically every one should be skilled in the use of the bow, are sufficient evidence of the value which our ancestors placed upon it before "villanous saltpetre" ousted it from the proud position of our national weapon. After fire-arms had taken the place of the bow in war, the practice of archery appears in a great measure to have died out, though it still existed in the north of England, and up to about 1760 in the Finsbury fields.

The revival of Archery as a pastime can be traced to 1780, when Mr. Waring, the Secretary or Manager of the Museum belonging to Sir Ashton Lever at Leicester House, took it up. Finding that it improved his health, he persuaded Sir Ashton Lever to try it. He did so, and, fascinated by it, with the assistance of his friends founded in 1781 the Royal Toxophilite Society which, from that time to the present day, has maintained its position at the head of the sport. Patronised and practised by the Prince of Wales and other Royal Dukes, archery at once sprang into popularity, and numerous Societies were founded, which flourished till the stern reality of war gave people little time to practise the peaceable sport of the bow. On the conclusion of peace, it was again warmly taken up, old Societies were revived, new ones were started all over the country, and in 1844 the first Grand National Archery Meeting took place at York. At the present time, there are numerous Societies all over England, and the five public meetings held annually show the popularity of the sport.

Of the pleasures of archery and the facilities which it affords to both ladies and gentlemen for physical and graceful exercise there can be no doubt, and its fascination is well known to all who shoot. Unfortunately it has the drawback of being difficult, and without regular practice and a knowledge of how to do it, it is not easy to excel, this however in the eyes of its votaries being one of its principal charms.

The object of this article is to give instruction which will assist beginners to commence shooting in the correct way, a great obstacle to success being the assumption of wrong methods at first, faults being thus established which it is difficult afterwards to eradicate. Many books of instructions on the subject have been written, commencing with Ascham's *Toxophilus* in 1545, down to the present day, good, bad and indifferent. It is therefore impossible to write a new essay on archery without repeating much of what has been already said by the writers who come under the first category, notably Messrs. Roberts,[1] Ford,[2] Butt,[3] and the latest exponent of the art, the Rev. Eyre Hussey.[4]

The logical course seems to be first to describe the implements of the craft, and then endeavour to teach their use.

Bows are called "Self" if made of one piece of wood, and "Backed" if made of two or more strips of wood glued together. Self bows are generally made of yew or lance, though the term as applied to those made of the former wood is misleading, as they are almost invariably spliced at the handle. Self-yew is the dearest bow made, self-lance the cheapest. Backed bows are made of various combinations, yew-backed yew, as implied by the name, having both back and belly made of yew, being the best. In all other descriptions the back is made of hickory; yew, fustic, washaba, or lance supplying the belly. In three-piece bows the back is generally hickory, the centre fustic, and the inside of the belly yew.

There is no question that the best bow is either a self-yew, or a yew-backed yew, there being little to choose between them; but both are expensive, require careful handling, and are easily damaged. Beginners are therefore advised to commence with a self-lance, taking to a three-piece yew, fustic, and hickory as their shooting advances, and a self or yew-backed yew, when their skill and knowledge warrant it. A self-lance does not last long, as it soon loses its "cast" or power, but the three-piece will last a long time. The more expensive bows are certainly the most pleasant to shoot with, but it must not be thought that good scores cannot be made with the cheaper backed ones, provided they are made the right shape; indeed many good shots use nothing else.

The shape of all bows should be much the same, namely, it should be quite straight, or slightly follow the string (Fig. 1). If the bow is at all reflexed, as it is called when the back bends forward, it is apt to jar on being loosed, the only exception being when a self-yew is

[1] *The English Bowman.*
[2] *Archery, its Theory and Practice.*
[3] Butt's *Ford.*
[4] *Archery* (The Badminton Library).

made this shape in consequence of the natural growth of the wood.

The length of a lady's bow should be from 5 ft. 5 in. to 5 ft. 7 in., and of a man's from 5 ft. 11 in. to 6 ft. 1 in., the longer bow being the best. If longer arrows than the respective standard lengths of 25 and 28 inches are to be used, the bow should be longer, or the increased strain may break it. The weight marked on a bow is the number of pounds it will take to pull it—25 inches if a lady's, or 28 inches if a man's.

In choosing a bow care should be taken that the grain is close, even, straight, smooth, and free from knots or pins, especially on the centre of the belly, as the rounded part is called, and towards each end. This is particularly necessary with yew, as pins in this wood are liable to develop into "crysals,"—minute cracks at first scarcely visible, but gradually increasing in size, are termed, which eventually cause the bow to break. The grain on the flatter side of the bow or back should be smooth and even from end to end, and in a self-yew the line between the white and darker parts of the wood should be well defined and even.

Fig. 1.—The Bow.
A, Upper limb.
B, Handle.
C, Lower limb.

The weight of the bow to be selected is an important point; it is a common thing to find archers "overbowed"—*i.e.* having a stronger bow than they can manage. The weight of bow that can be pulled is one thing, that which can be properly loosed is quite a different matter. It is a mistake to suppose that the stronger the bow the lower will be the trajectory; unless the bow is thoroughly under control, the reverse will be the case. Ladies are advised to begin with a bow of 24 or 25 lbs. and men with 46 lbs. The longest distance now shot is 100 yards; a properly loosed bow of 48 lbs. will carry it well, and it is far better to be "under" than "over" bowed.

The weight being decided on, the back of the bow should be held upwards to see that it is straight, and that the two limbs are in the same plane. It should now be strung and the bend when drawn up carefully examined to see that the bow is rigid for about 20 inches in the centre, thence bending equally to each end (Fig. 2). It should then be held string uppermost, one end resting on the ground, when the string should appear to divide the bow into two equal parts.

Arrows are made of deal, the best being "footed" with hard wood at the point or pile end, and these alone are to be recommended; for though good shooting can be done with a cheap bow, cheap arrows are in the long run the dearest, besides being unsatisfactory. Arrows are made of four different shapes: the "straight," which should be the same size from end to end, but slightly reduced at the feathers; the "barrelled," which are largest in the centre, tapering both ways; the "bob-tailed," which are gradually reduced from the pile to the feathers, and the "chested," which is largest at about one third of its length from the feather end, tapering thence towards both ends. This last arrow is only used for flight shooting, and it is the others which bespeak our attention. The straight arrow is the steadiest and stiffest, but it is not quite so fast as the barrelled, for which reason several good shots prefer the latter. The bob-tail is a weak, bad shape; it is not sufficiently strong to stand the blow it receives when leaving the bow, and consequently it "flirts" or flies off to the left. The straight arrow is the one recommended, but care must be taken that it really is straight, as many so-called straight arrows are bob-tailed.

Fig. 2.—A good Shape when Strung.

The **feathers** are made of two patterns, the straight (Fig. 3) and the parabolic (Fig. 4). They should not be too large, and should be placed as far back as possible, the former shape being perhaps the better. The wing of the peacock supplies the stiffest and most durable feather, turkey's coming next, the "grey goose wing," that poets write about, having lost its charm to the fletcher.

The flight of an arrow, supposing it to be properly shot, is affected by its weight and balance. The weight, which is marked at the nock end of the arrow, represents its equivalent in new silver; thus an arrow marked 3.3. weighs 3s. 3d., 4.6. 4s. 6d., and so on. The balancing point is that part of the arrow on which it will balance on the finger. It will generally be found that all the arrows in a dozen are not precisely alike in these particulars, a variation of 1d. or 2d. in weight not being unfrequent. The arrows should therefore be sorted into sets as nearly as possible alike in weight and balance, to be used

at the same time. No doubt the difference in flight caused by the weight and balance not being exactly the same is not very great, but there is no reason for "giving away" anything.

The weight of the arrow should be adapted to that of the bow, as if the arrow is too light it

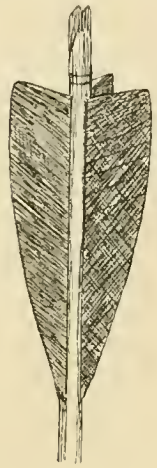


Fig. 3.
Straight Feathers.

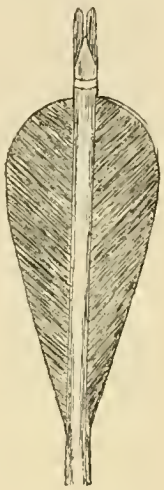


Fig. 4.
Parabolic Feathers.

will be liable to flirt. For ladies' bows up to 27 lbs. 3.3 should be heavy enough, beyond that weight 3.6 is advisable. For a bow weighing from 45 to 48 lbs. the arrow should not be lighter than 4.6, 4.9 being suitable for heavier bows. Arrows longer or shorter than the regular length should be heavier or lighter accordingly.

In order to ascertain if an arrow is straight, put the nails of the thumb and second finger of the left hand together, place the footing of the arrow upon them, and holding the nock of the arrow with the thumb and finger of the right-hand twist the arrow so as to make it revolve. If it does so smoothly it is straight, if it is crooked it will jump.

Tips, as the leather protection for the fingers of the right hand are called, are made of two

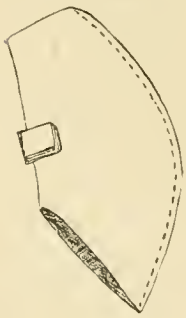


Fig. 5.—Knuckle Tip.

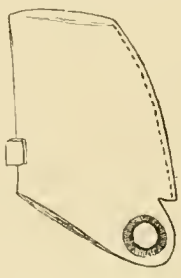


Fig. 6.—Screw Tip.

patterns, the knuckle (Fig. 5) and the screw (Fig. 6). There is not much to choose between them but great care must be taken that they fit accurately, the top of each finger just showing through the top of the tip. The leather of each tip should be of the same substance and not too thick. It will be found a good plan in order to keep the tips supple, to rub vaseline into them, and before putting them on, the fingers should be moistened and rubbed on glue.

There are many other devices for protecting the fingers and obtaining a good loose; sewing

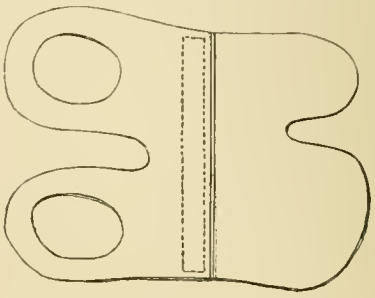


Fig. 7.—Tab.

pieces of leather on the fingers of an ordinary glove is a favourite device among ladies, and is not a bad one, provided the leather is not soft or spongy. The tab (Fig. 7) has many advocates, but it is not easy to use, and the beginner had best be satisfied with tips, or leather sewn on a glove. The tips which are sold fastened together to strap round the wrist are to be avoided, as they never fit all three fingers.

The **bracer** or arm guard is strapped on the left arm to protect it, should the string strike it when the arrow is loosed. It is made of various patterns, the best being that in which the straps and bracer are cut out of one piece of horse butt, and graduated, which is called after its

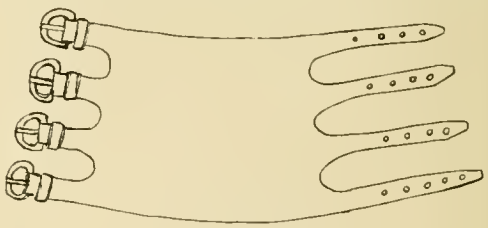


Fig. 8.—Lewin Bracer.

inventor the "Lewin" (Fig. 8). A less expensive shape, also made entirely in one piece, but of ordinary leather, will also be found satisfactory, but it does not fit so close to the arm.

The belt with quiver attached is necessary for ladies, but men generally now discard it, placing the arrows in a pocket of the shooting-coat. A tassel to wipe the arrows and a scoring-book complete the archer's personal equipment. The **targets** now used are four feet in diameter and made of straw, having a canvas face on which five concentric rings are painted—the

centre gold, then red, blue, black, and white. The value of each ring is respectively 9, 7, 5, 3, and 1, and the arrow counts as if it were in the ring of the highest value which it touches. It is usual to have two targets pitched opposite each other at from two to five yards more than the distance to be shot, the centre of the target being four feet from the ground. Each archer stands at the proper distance in front of the target and shoots three arrows, which are called an end. After all have shot, another end is shot from the opposite target, and so on till the appointed number of arrows has been shot. The scoring-book is therefore divided into six spaces, the first four for the ends and the two last for the total hits and score in the dozen. Supposing the first three arrows to have resulted in a blue, the next in a gold and red, the third in a black and white, and the last to have been missed, the dozen would be marked thus—

5 - -, 97 -, 31 -, - - - 5 -25.

A few words are necessary before trying to instruct the beginner how to use his or her newly-acquired weapons. Archery in many respects resembles rifle-shooting, and, as in the latter, position and aiming-drill are highly useful, but of themselves will not make every one a first-class shot, so in Archery, assistance can be given by useful hints, but practice alone will enable an archer to become a good shot.

First of all, it cannot be too strongly impressed on the mind of every beginner that deliberation and strict attention to every detail are absolutely necessary, and that undue haste is to be avoided. It is far better practice to shoot a few arrows carefully and well than a York Round against time. Losing one's temper, or giving up "because I can't shoot," is fatal. Few sports afford so many opportunities for losing one's temper as Archery, and none exacts a greater penalty for its loss.

In Archery, **position** is everything, and though everybody does not shoot in *precisely* the same attitude, still the difference among good shots will be slight. Some archers succeed in making, for a time, good scores in indifferent fashion, but sooner or later they come to dire grief. Many names could be given of promising beginners, who, having made good scores by bad methods, scorned advice, and after a year or two were reduced by their tricks to hopeless mediocrity or worse.

Before attempting to shoot, the bracer should be carefully put on the left arm, the sleeve being drawn back so as to leave it on the inside smooth and free from wrinkles. The next thing is to "string" or "bend" the bow. Grasp the bow at the handle with the right hand, the back, or flat part, being towards the body, and place the bottom horn against the hollow of the right foot. Place the ball of the thumb of the left hand about five inches from the top of the bow, the fingers resting against the eye of the string. Draw the right hand towards the body, at the same time pressing down the left hand, and place the eye of the string in the nock of the upper horn with the fingers (Figs. 9 and 10). The method of unstringing is the same, except that the eye of the string is lifted out of the nock.

Now see that the string is straight by looking at the bow, string upwards, and also observe if the string at the handle is the proper distance from the bow ($5\frac{1}{2}$ inches for a lady's and 6 for a man's). Next, see that the nocking-point is marked exactly opposite the top of the

Fig. 9.—Stringing.

handle, so that the arrow, when "nocked" on the string and resting on the forefinger of the left hand, which should be even with the top of the handle, is at right angles to the string. This is important, as, should the nocking point be too high or too low, the arrow will not fly properly.

Supposing a pair of targets to have been duly pitched opposite each other sixty-five yards apart, the archer should place himself on the mark five yards in front of one of them. He should stand sideways, the feet about eight inches apart, so that a line drawn through both heels should pass to the centre of each target. The body should be perfectly upright, the head

erect, but turned to the left, the eyes fixed on the gold of the opposite target.

The handle of the bow should now be grasped, the upper part of the hand even with the top of

Fig. 10.—Position of the Hand in Stringing.

the handle, the back of the bow parallel with the knuckles of the finger and thumb. Fig. 11 shows both sides of the hand. A line passing through the centre of the bow will, if the grasp be correct, fall just inside the knuckle of the thumb. The wrist must be quite straight; if it is bent back, the string will strike the bracer; if forward, power is lost. Now raise the left hand

Fig. 11.—The Grasp.

to the full extent of the arm, and, looking over the knuckle, see if the centre of the bow is on the gold. If it comes on it at once, the position will be correct; if it does not do so, raise the toes, turning on the heels slightly to the right or left till it does. If the hand cannot be brought on the required spot without doing so, the right foot may be drawn back slightly. The position of the feet is all important, as it governs that of the shoulders, which should be at right angles to the target or point of aim. Should it be necessary, in consequence of wind, to aim to the right or left of the target, the feet should be moved accordingly; on no account should the required position be obtained by turning the body on the hips.

Having got the correct position, take an arrow with the right hand and place it on the knuckle of the left, placing the nock on the nocking-point, the cock feather (that which is at right angles to the nock) being farthest from the bow, and press the string home. Place the first finger on the string above the arrow, the second

Fig. 12.—Before the Draw.

and third below it, holding the arrow without pressing it on the string. Hold the bow as nearly upright as possible, the left arm close to the side, the forearm bent level from the waist and pointing towards the target, and bring the right hand across the body as far as possible (Fig. 12).

Gradually extend the left arm, tightening the grasp on the handle, till the hand is on the point of aim, at the same time bringing the right hand just under the chin, the thumb touching it, the right elbow being slightly raised (Figs. 13, 14, and 15). It will be seen from Fig. 13 that the right elbow should not be raised above the line of the arm, till the arrow has been drawn about three-quarters of its length.

During this motion, the body must be kept

upright, resting firmly on the feet, the weight thrown slightly on the heels. The head must be erect, the face being turned towards the

Fig. 13.—Drawing.

target. Both wrists should be quite straight, and not turned in or out. This movement should be repeated several times before trying

Fig. 14.—Drawing.

to loose an arrow, indeed it can be practised with advantage at home before a looking-glass, but it must never be attempted without an arrow in the bow, as the bow might be over-drawn, and broken.

Aim and **loose** now claim our attention. The point of aim will of course vary according to distance, and it is also affected by the strength of the bow, the wind, and above all the loose. This is, however, merely a question of raising or lowering the left hand, as the right should always be in the same place, and practice alone will enable the archer to find the right spot. The bow being drawn as explained above, and still taking the gold as the point of aim, as soon as you are in position, see that the point of the arrow is pointing direct to the gold over the left hand.

Now comes the critical part of the shoot, the loose or release of the arrow from the bow, and truly a good loose is as valuable as it is difficult

Fig 15.—The Bow Drawn Up.

to attain. The best loose is obtained by drawing the right fore-arm slightly back, at the same time making a slight outward turn of the right wrist, the thumb remaining against the chin, the fingers remaining closed after the release, as they were before it (Fig. 16). Of course the whole operation takes far less time to perform than to describe, as the arrow should not be held longer than is absolutely necessary to get the aim, nor should it be loosed till the aim has been obtained. Care must be taken that neither the right hand nor elbow is allowed to drop, and that the former does not leave the chin. The left hand should also be kept up till the arrow has hit the target or the ground, as the archer will thus be enabled to ascertain if it has shifted during or after shooting.

The importance of always drawing to the

same spot cannot be too strongly insisted on, and this cannot be accomplished unless some part of the face is touched, the chin for choice. The right hand should never be brought behind the eyes, but should always be in front of them, or a correct aim cannot be obtained. The distance between the right hand and the eye acts as a back-sight does in a rifle, the point of the arrow corresponding to the fore-sight. For this reason, it is necessary that the head should be erect, and that the hand should be brought to

Fig. 16.—After the Loose.

the chin, *not the head brought down to meet the hand*, as if this is done the arrow must fly low to the left. It is also necessary that the right hand should not leave the face at the moment of loosing, as should it do so, the left hand will be pulled out of place. How important it is that the left hand should be kept steady will at once be understood, as should it be moved up or dropped the arrow will of course go high or low, and any lateral motion would equally prevent its going straight.

A common fault is to allow the right hand to move forward when the arrow is drawn up and while the aim is being taken. This is called "creeping," and must be guarded against, as it gives a forward loose which takes all the vitality out of the arrow's flight. Dropping the bow-hand and allowing the body to turn on the hips at the moment the arrow is loosed are also faults which must be avoided.

Attention must be paid to the string, and should any symptom of weakness be observed, a new one should at once be fitted, as the fracture of the string will often cause that of the bow; indeed, a careful archer should always have a spare string ready whipped. To put on a string, place the eye over the upper end of the bow, seeing that it is free from kinks, and push it down about six inches. To make the timber hitch with which it is fastened at the bottom take a turn of the end round the string, and twist it three times round the loop (Fig. 17). The string requires (in order to assist the loose and to protect it should it strike the bracer, which it should never do) to be served or whipped with carpet thread for about two inches above the nocking point and five inches below it. To put this lapping on, string the bow, find the nocking point as before explained, and mark the string two inches above it. Wax the string well for seven inches below the mark, and place the bow, string upwards, on the knees. Lay half an inch of the thread along the string, and wrap the thread tightly round the end and string, till the waxed part is nearly lapped. Now take five or six turns of the thread round the string, in the reverse way, and bring the end of the thread to the lapped part, holding it with the thumb. Lap the reversed turns over the end of the thread and string till they are all undone, and then pull the end through, holding the lapping down with the finger and thumb to prevent its rising (Fig. 18). A nocking-point of silk half an inch long put on in the same way, makes the string ready for use. The nocking-point should fit sufficiently tight to bear the weight of the arrow.

Fig. 17.—The Loop.

All Archery materials require careful looking after. The receptacle in which they are kept is termed an Ascham, and it should be so arranged that the bows do not rest on the ground, and that the arrows stand upright on their points, each arrow passing through two corresponding holes cut in two boards about fifteen inches apart. It is needless to say it should not be in a damp place, nor should it be close to the kitchen fire, an equal temperature

being required. Should a favourite bow show symptoms of being "crysalled," it is as well to have it looked to at once, as a new belly can generally be put in. The strength of bows can be increased by shortening them, but this is not recommended unless the bow was

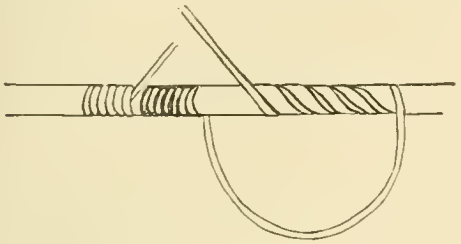


Fig. 18.—Whipping.

originally extra long; to weaken bows is a simple matter for the bowyer.

For going to meetings a bow box, or waterproof canvas bag termed "a pole," should be procured, while the arrows can be conveniently carried in what is called the "Wiltshire" box, which has a compartment for tips, &c., and is made by Messrs. Aldred. Should the bows or arrows get wet they should be carefully dried, the string beeswaxed, and the feathers of the arrows shaken before a fire.

Roving, or shooting at unknown distances is no longer practised, all shooting now taking place at known distances. The York Round, consisting of six dozen arrows at 100 yards, four dozen at 80, and two dozen at 60, is generally shot by men; the National Round of four dozen at 60 and two dozen at 50 being the recognised one for ladies. Longer distances, or "clout shooting," are only patronised by the Woodmen of Arden and Royal Company of Archers at Edinburgh.

Shooting at a Popinjay, or painted wooden bird, was formerly a popular form of Archery. In England it is extinct, but it survived at Kilwinning in Scotland till 1870, where it was called the "Papingo." The papingo was placed on the top of the Abbey tower, and shot at from below, whoever brought it down receiving a "benn" or muffler. This style of shooting is almost the only form of archery still practised in France and Belgium, though the method of shooting is somewhat different to that of the Kilwinning Papingo. In France, outside certain towns, notably Calais and Boulogne, long poles may be seen with wires projecting at right angles, and graduated from the top. On the top of the pole and on the wires, when a meeting takes place, are placed imitation birds decked with ribbons, to each of which a specific value is attached, the highest being that of the top bird. Competitors stand sufficiently close to the pole to be able to rake the wires and top bird, using strong bows, and arrows having a broad flat horn head, receiving the equivalent value of any bird they may bring down. In Belgium somewhat similar competitions take place, a sort of penthouse round the pole regulating the distance the competitors stand from it.

It may be thought that the use of the bow in field sports is a thing of the past. Such, however, is not the case. Of its practical use in the chase and the delights which attend camping out with the bow for one's sole weapon, Maurice Thompson has much to say. The experiences of himself, his brother and others in Florida, Georgia, Illinois, Indiana, &c., while sporting with the bow, are the subject of many pleasant pages in *Scribner's*, *Harper's*, the *Badminton*, and other magazines, and tell us of turkeys, herons, wood-ducks, thunder-pumpers, and other strange birds and beasts slain with the bow; bass or trout of four pounds weight also falling victims to it. The camp life seems to have closely approached the conditions existing before the introduction of firearms.

A member of the Royal Toxophilite Society, Mr. J. Straker, an enthusiastic archer, has for some years, taken bows and arrows as part of his sporting-kit to India, and has met with some success in using them against birds. Of the advantage the bow has over the gun in not disturbing a tract of ground he speaks highly, but he has not, like Mr. Thompson, trusted wholly to the bow.

Mr. H. Peard, M.B., has told us in the *Field* on sundry occasions of his sport in Argentina with a bow and arrows. Small partridges, tinamou ducks, spur-winged plover, nutrias, biscacho, and foxes, "horresco referens," are mentioned by him as falling victims to the "winged shaft."

Even in England, rabbits are shot with the bow, so it will be seen that its practical use is not yet extinct. One thing stands prominently forward, that all who write on this particular branch of Archery vie with each other in its praise.

H. Walrond.

ARMADILLO (*Dasypus pelosus*), a South American burrowing ant-eater, protected by an armour of bony plates. It is much hunted for food, the usual course being to smoke it out of the burrow and then put trained dogs on to it. When attacked, it curls up like a hedgehog.

ATHLETICS, or ATHLETIC SPORTS—The wide term Athletics bears at the present day in the sportsman's vocabulary the special or restricted meaning of competition at running, jumping, and putting, or hurling, of weights, as practised on specially prepared tracks or grass fields in the open air. After being practised without much system for many hundreds of years in England for amusement, and for something like a century by paid or professional exponents, athletic sports have gradually, during the last

thirty years, been developed upon systematic lines into an organised form of sport for amateurs [*see* AMATEUR]. Every public school and most of the private schools of any size have an annual athletic meeting: each college at the universities has its meeting; there is at each university a meeting open to the whole university; and these are followed by the annual contest between Oxford and Cambridge in London, usually on the day preceding the Boat Race; the hospitals and military colleges follow the example of the universities; and hundreds of clubs throughout the kingdom hold meetings with competitions for their members and with "open" races—that is, open to every approved amateur. In each summer there is an Open Championship meeting held in rotation in London, the Midlands, and the North, under the management of the Amateur Athletic Association, which is the recognised governing body of athletic sports; and this never fails to attract entries from every part of the United Kingdom and occasionally from the United States and the Colonies. A similar system of athletic sports has taken firm root in the United States, where the sports are termed Games; and the system is already spreading in France and to some small extent in Germany. In 1895, there were a number of athletic events included in the so-called revival of the Olympic Games at Athens, several Americans, Englishmen, and Frenchmen being amongst the competitors.

The wide-spread popularity of athletics in this country fairly entitles them to be ranked among the national sports of the country. The fine runner or jumper ranks in popular esteem with the fine cricketer, footballer, or oarsman. At the universities those who compete as "first strings"—*i.e.*, "first choices"—in each event at the Inter-University meeting are entitled, like the members of the Eight, the Cricket Eleven, or the Football teams, to wear the blue coat and cap which are reserved for those who represent one university against the other, and are known as "blues"; and in schools, colleges and clubs, the best athletes are similarly held in high honour.

At the universities, the two winter terms are those devoted to athletics, the summer term being mainly devoted to cricket and boating; and the University athletic season concludes before Easter with the University and Inter-University sports. Most of the public schools follow the example of the universities in bringing off their athletic meeting before Easter. Throughout the rest of the country, however, the athletic season begins in May, and continues throughout the warm weather until the end of September, when the athletes betake themselves to paperchasing, football, or other winter sports. The Amateur Championship meeting is now always held on the first Saturday in July. As the Scottish and Irish Championships usually precede the English Championship meeting by a week or two, the athletes of the three kingdoms are best brought together at this date; but the fact of the meeting being held in the summer operates to the prejudice of the university athletes, as they find it difficult to get into condition at this time of year.

It is perhaps superfluous to say that excellence in athletics demands not only natural ability, but long and arduous training and preparation. Training, so far as diet and conditions of health are concerned, is treated of elsewhere [*see* TRAINING], and does not vary much in essentials from the training required for rowing or other hard bodily exercise. It is with the peculiar features of preparation and the requisites of success in the special events which are commonly included in the programme of an athletic meeting that the following articles will mainly deal. The programme selected for the earlier meetings of the two universities has done much to determine the line on which athletic competitions have developed. At the Inter-University meeting there are nine events—viz., 100 Yards, Quarter Mile, Mile, Three Miles, (all flat races): 120 Yards Hurdle Race over ten flights of hurdles, each 3 feet 6 inches high, High Jump, Long Jump, Weight Putting (16 lbs.), Hammer Throwing (16 lbs.). The Amateur Championship meeting has the same nine events with the exception that the Three Miles is replaced by a Four Miles, and has in addition a Half Mile Race, a Pole Jump, a Two Miles Steeplechase, and a Four Miles Walking Race. In addition there is a Ten Miles Championship Race, which is held in the spring at the conclusion of the paperchasing season.

It is usual at an ordinary club meeting to make most of the races handicaps. By this means, large entries are secured, as the number of superlative athletes is small compared with the hundreds, or one may fairly say thousands, who, though of mediocre ability, are able to win prizes with a moderate handicap.

At the universities and at most of the big towns, athletic sports are held upon a regular running-ground which has a cinder track of a quarter or a third of a mile in circumference, with grass in the centre of the track, and specially prepared places for the Jumps, Weight Competitions, and Hurdle Races, the ground also including seating and standing room for spectators and proper dressing accommodation for the competitors. In most country districts, the venue of the meeting is the local cricket ground.

Of late years, the popularity of athletic sports with spectators has rather tended to discourage the cultivation of Jumping and the Weight Competitions, and to increase the number of flat races. Jumping and Weight Competitions with many competitors take a great deal of time and cannot so easily be witnessed and followed with interest as races round a track. At the

present time Jumping and Weight Competitions are not practised in England nearly so much as in Ireland or Scotland.

The governing body of athletic sports is the Amateur Athletic Association, the practical work being done by three committees in the North, South, and Midlands respectively. To this body some 200 athletic clubs are affiliated, and about as many more, without being affiliated, hold meetings under "permits" from the governing body and under their rules and jurisdiction. To give some idea, by rough computation there

A Country Meeting.

are probably about 1,000 athletic meetings, great or small, held in the United Kingdom, and the number of persons competing throughout the country is certainly not less than twenty-five thousand.

Montague Shearman.

CROSS-COUNTRY RUNNING—Every year sees an increase in the numbers participating in so-called cross-country running, and clubs spring into existence in bewildering succession, some to flourish with the growth of years, but many either to become absorbed in larger organisations, or else to die a natural death. In spite of this it is doubtful whether more than a small percentage of this number have any conception of the delights of real cross-country running, and it cannot be denied that the pastime has declined in popularity, and has lost caste amongst the educated classes. The reason, so far as London is concerned, is not difficult to understand. The rapid growth of the suburbs necessitates a longer train journey to reach the open country than formerly. Too many clubs are, through the exigencies of circumstances, compelled to have their head-quarters in thickly populated districts; and the appearance of clusters of runners, generally of very poor class and all too airily clad, splashing through muddy thoroughfares, is not an inspiring spectacle, and undoubtedly tends to prejudice the minds of those who have had no opportunity of becoming acquainted with the sport at its best.

Infinitely the most enjoyable and invigorating branch of cross-country running is the old-fashioned paper chase, introduced about the year 1867. It is with sorrow that we have to record the fact that every year the paper chase finds a smaller place in the fixture-card of leading clubs, and that it is being displaced by the ever-increasing number of races with their attendant prizes, which involve traversing two or three set courses so often as to become quite monotonous.

If a paper chase is to be successful, the details cannot be too carefully arranged. Two hares are chosen, preferably of equal calibre, possessing a knowledge of the surrounding country. They should, before starting, have a general idea of the course they mean to steer. Each hare carries a long sausage-shaped bag supported from his shoulders, packed tight with printers' waste strips, which are recommended strongly in preference to squares of paper. It is essential to the success of the chase that a continuous trail shall be lightly laid; and the practice in vogue at our Universities of laying the scent in patches some distance apart is to be condemned. If these ordinary bags are tightly packed, the paper, with judicious laying, will easily last ten miles. A clever pair of hares will lay several false scents to check the too rapid progress of the hounds, and by taking advantage of cover and varying the nature of the country as much as possible the run is made more interesting. The grace allowed the hares is usually ten minutes, but it should not exceed fifteen minutes, and the hounds can be despatched in fast and slow packs if found desirable; to maintain interest the hounds should always have a fair chance of catching the hares. Upon the hounds receiving a check, say in the middle of a field, the pack should at once spread out in fan shape, and on the scent being regained the fact should be notified by bugle or call. The distance traversed will, of course, vary considerably, but it should not exceed ten miles, for there are few runners who can last a longer distance without undue exhaustion. Some runners maintain their stride throughout, and we have even known instances of men who have kept on their toes throughout a long journey, but the majority of runners are not strangers to a temporary feeling

of fatigue during some part of the journey—it may be over plough or going up hill—but they are recommended to make the effort to maintain a jog trot rather than indulge in the luxury of a walk, because it is found that alternately walking and running materially increases the fatigue in the long run.

The dress suitable for cross-country running is a pair of twill knickerbockers cut fairly short, so as not to interfere with the action of the knee, a thin merino vest, and sweater if the weather be bad, and indiarubber or spiked shoes, the latter being preferable as giving a better grip on the ground.

Training for the cross-country championships has now been reduced to a science; and the gentleman amateur, though he may be a first-class cross-country performer, is no longer able to hold the position of a few years ago, unless he is prepared to devote the whole of his leisure time to training. The championships are now usually run round race-courses or enclosed spaces, instead of over genuine cross-country, and the question of gate plays an all-important part; this system is followed by betting with its attendant evils. If a competitor is training for

Cross-Country Championship.

a cross-country championship, say, ten miles, he is advised to take long road walks at a brisk pace, varied by occasional spins of two to four miles on the track or road, with a weekly run across country. Many runners fall into the fatal error of thinking the best form of training is to confine their work to cross-country, and to run from five to ten miles at repeated intervals. There could be no greater mistake, because they will quickly tend to become hopelessly slow, and moreover are likely to overstrain themselves and be quite unable to make the extra effort that is often called for at the crisis of the race.

The question of pace plays an important part in a cross-country race, and our experience is that scratch and back-mark men will find it advantageous to make the pace hot from the start, as, if fit, they are likely to maintain it fairly evenly throughout, whereas it is often difficult to increase the pace after a slow start, and as an illustration of this we may instance a cross-country championship, where it is generally recognised that the leading twenty at two miles will furnish the first fifteen at the finish.

No material alteration in the ordinary diet is recommended, the important point to bear in mind being that the training should be of such a character that the competitor turns up on the day of the race not only fit but anxious for his work.

We have dealt with the practical, rather than the historical, side of the question; firstly, because a record of performances is apt to become somewhat invidious, and, secondly, because there are not, and cannot be, any reliable cross-country records, owing to the marked differences in the nature of courses, and in their ever varying condition.

Over-anxious parents often place a veto upon cross-country running, but experience has amply proved that, given a sound constitution, the fear of over-strain is very little, and certainly no healthier or more invigorating recreation can be found.

Harold Wade, L.A.C.

HIGH JUMPING—One of the prettiest of our athletic pastimes has of late years been much neglected by sports-promoters. Popular opinion has always held the view that the high jumper is a freak of nature possessed of wonderful "spring," the seat of which is usually supposed to be in the instep and toes. No view could be more erroneous. High jumping may be, in special cases, a gift, but is almost invariably the result of long and constant practice; nor is the jump accomplished by a spring from the toes. It is in reality done from the knees, off the flat of the foot and, in many cases, the heel. This latter is easily verified by examining the "take-off" on a soft day, when the heel-mark is always very prominent. The methods of jumping are various, but two main types predominate—viz., the straight jump, and the side-way or scissors jump. The pure straight jump—*i.e.*, lifting the knees directly up to the chin and so crossing the bar—is rare, and is more usually combined with the "shoot," or twist. The principle in all methods is the same. The first effort of the would-be aspirant to fame is to get his feet over the bar, and with this end in view, always to practise at a higher bar than he thinks he can clear.

Never allow him to raise the lath himself, as by so doing he is aware of the height he is essaying, and knows exactly when he has reached his usual limit. By employing an

assistant to raise the lath, he is unaware as to the exact height and often clears more than he expects. Having learnt to raise his feet, he must now endeavour to raise his body in the air by a muscular contraction and also by using the limb, or limbs, which are over the bar as a lever: at the same time by means of a twist or

High Jump.

shoot, and a sudden lifting of the arms over the head, he must so alter his position in the air that his feet, which have previously been as high as, and in many cases higher than, his head, now point directly downwards, and by this means he will lift his body and buttocks clear of the bar. It will thus be seen that, instead of a single spring, several separate actions constitute the true jump. In fact, his endeavour should be to climb over the cross-bar in sections, first the feet, then buttocks, and lastly the upper part of the body.

The Take-off—It is essential to find a level spot from which to take off at a given distance from the bar. Practice alone will determine the correct spot for each individual performer. This spot should be fixed, and always adhered to. A simple method in practice is to stick a hair-pin through a piece of paper, which thus catches the eye

The Run-down—The length of the run varies with each individual, but should be short for the low jumps, and gradually lengthened for greater heights, and should be as long as it can be made without tiring the muscles, as the momentum hereby gained allows more time for executing alterations in position while in the air. The last three steps should be somewhat longer than the others, and of the nature of slight jumps and should, like the take-off, be fixed.

Training—As to training for jumping, all the muscles of the body must be in good condition. Sprinting is excellent: gymnasium work is also good. All toe-exercises are useful, especially skipping; in short, all exercises tending to strengthen the muscles round the knee-joint. One should never jump more than three days a week, and never within four days of a competition, as the muscles are apt to lose elasticity. Stiffness must be vigorously guarded against. High kicking is very useful during the off-season.

One's shoes should be light, strong, and tight-fitting, and should in addition to the ordinary toe-spikes, contain three heel-spikes arranged in triangular form, with the apex of the triangle posteriorly. If possible, a pit should always be used to jump into, as by this means the jar which always follows on landing is greatly diminished.

But infinitely more important than all of these are the qualities of self-confidence and pluck, without which no one need hope to become a successful exponent of jumping.

Reginald Williams.

HURDLE RACING has been in vogue since the early days of amateur athletics, and perhaps in no branch of athletic sports is proficiency more difficult to attain.

Hurdle races at various distances, such as 300 yards and 440 yards, are at times included in the competitions at athletic meetings; but from the first, the favourite distance has been 120 yards, with ten flights of hurdles, 3ft. 6in. high, placed ten yards apart, thus leaving fifteen yards from the starting-line to the first hurdle, and the same distance between the tenth and the winning-post. Sprint hurdle races must always be run on a straight course. In this country they are invariably run on grass, which must be perfectly level; but in America it is customary to use the cinder track, which is undoubtedly faster. Hence the American records are slightly better than our own.

The Hurdle—The modern hurdle consists of an obstacle specially made with perfectly level top bars; the result is that flights of uniform regulation height are secured, and no competitor is benefited or impeded by any irregularities in the top bar, as was so often the case in the old style of hurdle. They are fixed on short pedestals of about a foot in length, and are much superior to the old hurdles in that they can be easily moved and the necessity of driving into the ground is obviated.

It was early discovered that in the race of 120 yards with ten flights, each 10 yards apart, three was the requisite number of strides on the flat between the hurdles; and no one can hope to attain even mediocrity as a hurdle racer unless he can accomplish what is generally known as the "three stride" method. This consists in taking three complete strides on the flat, the fourth stride carrying the runner over the hurdle.

To accomplish this the runner must be careful to approach the first hurdle at the highest speed attainable, and in rising from the left foot (jumpers usually preferring to spring from the left) the right knee is raised upward and forward above the hurdle, and the leg (from knee to foot), brought inwards across the line of the body with the foot on as nearly as possible the same level as the knee, traverses the bar in an almost horizontal position, and is then brought to the ground as rapidly as possible. In the meanwhile, the left leg, with the knee pointing outward, is brought up rapidly as the body passes over the bar and is carried forward to the ground, thus constituting the first of the three strides.

The practised hurdler manages to gather up his legs in clearing the hurdle in such a way that

HURDLE RACE.

only an inch or two intervenes between his body and the top bar.

Hints to Beginners—A beginner must remember that the hurdle must be cleared in a stride (*i.e.*, he must rise from one foot and alight on the other), and that he must in no case jump it; he will soon discover that jumping the hurdle will necessitate his taking five strides instead of three. Godfrey Shaw, of the London Athletic Club, probably the finest hurdler this country has produced, clears as much as fifteen feet in his stride over the hurdle, thus leaving the same distance to be accounted for in the three strides before rising at the next, and goes over the ten hurdles without so much as touching one. It will be seen, therefore, that the three strides, which appear almost insuperable to the novice, average only five feet each, or much less than he would be taking if running 100 yards on the flat.

Should the beginner find (as he no doubt will) that the regulation hurdles are too high, he should commence by practising over three or four obstacles of about 2ft. 6in. in height, but always ten yards apart.

When he can accomplish the three strides over these, he should gradually increase the height and number of the obstacles.

There are several qualities necessary for the making of a crack hurdler. He must have speed and jumping power (hence it is that good hurdlers are frequently good long jumpers); he must have, too, dash and determination, and not be afraid of falling or barking his shins. That there are comparatively few hurdlers may be attributed to various causes. Among other reasons this branch of sport is not supported or encouraged by athletic clubs as it should be, by facilities being given for proper practice, or by including hurdle competitions in their programmes. Again, few good sprinters will take to hurdling, as there is little doubt that the mechanical and artificial action necessary in hurdling interferes with speed on the flat.

With regard to training for hurdle races, constant practice is the thing most needed; rigid dieting is comparatively unimportant.

In hurdle handicaps, where men have been known to give as much start as twenty-five yards, the runner most heavily weighted starts so many yards behind the scratch, and is usually described as "owing so much." Thus the limit, or longest start competitor, is usually placed on the scratch; though it sometimes happens that, on account of the length of the course being limited, the longest start man is placed as much as five yards in front of scratch, and has then only ten yards to run before reaching the first hurdle.

Finally, the beginner must remember that in hurdle racing constant practice will probably effect greater improvement than in any other branch of athletic sports. Frequently men who as novices are very slow, and who have the greatest difficulty in mastering the three strides, develop eventually into first-rate hurdle racers.

C. L. LOCKTON.

LONG JUMP—Long jumping ability is made up of two elements, **pace** and **spring**. Pace in the run-up supplies the impetus; spring enables the jumper to lift himself into the air so that this impetus has time to act before the law of gravitation takes effect, and also adds a certain amount of forward motion itself. A man who can jump well but is a slow runner can achieve a certain degree of success in the long jump by virtue of his spring alone; similarly a fast runner without much jumping power can cover a certain distance if he learns to rise a little at the end of his run. The best kind of long jumper is the man who is both a fast runner and a capable high jumper.

Thus it is clear that in training for the long jump, besides practising the long jump itself, a man must cultivate his sprinting and high jumping powers to their highest pitch. Practice at the long jump will enable him to combine the two skilfully.

Before beginning such definite training, it is necessary first to get into general condition by playing cricket, football, or any other game that gives good exercise; or to go through a course of grinding walks. Then should follow a week or fortnight of easy exercise on the cinder-track, consisting chiefly of sprinting and a little high jumping. This preliminary training will have got the muscles used in the long jump into working order, and actual practice may then begin. An experienced performer will not require more than a month's further practice to produce his best effort, though some men prefer to take much longer. Both in preliminary and in actual training for this event, it is absolutely essential not to do too much work a day. Two or three days a week may be given to serious long jumping, prefaced by about three high jumps and two or three short sprints. The other days should be devoted to serious high jumping and determined sprinting. A novice who has to learn the way to long jump must give himself six or eight weeks in order to obtain sufficient practice without overworking himself. Hurdling is an excellent subsidiary exercise for a long jumper, and it is a good thing to run over the entire length of flights or to take three or four flights four or five times. Hurdling and long jumping ability often go together, but if a man wishes to train simultaneously for both events he must give himself long enough to practise both adequately without having to do too much work a day.

The long jumper's sprinting practice should be very much the same as that of a pure sprinter. He should confine himself chiefly to short bursts of forty yards, with an occasional run through the hundred yards, varied by a stride over three hundred or a lap well on his toes.

In his high jumping practice he may follow the methods of the professed high jumper, supplemented with occasional "high-long" jumps—*i.e.* over a lath fixed at from four feet six inches to five feet and taken at the end of a fast run of about twenty yards.

With regard to actual practice at the long jump, he must aim at three things—to learn to take-off with the ball of his foot on the taking-off board; to do that when going at full speed; and to jump as high as possible into the air.

There are two reasons for taking-off on the board: first, that if the jumper takes-off behind it he is not credited with the full distance he has covered, all jumps being measured from the edge of the board nearest the pit to the hindmost heel-mark; secondly, because the board is firmer and more springy than the cinder-track. When a jumper takes-off six inches behind the mark, he loses a foot, if not more. This accuracy in taking-off is partly mechanical and a matter of practice, partly a matter of eye. When a man is fit and in good jumping fettle, his eye, brain and foot work so well together that he takes-off exactly where he intends. At the same time, it is fatal to look at the taking-off mark while running-up. His eyes ought to be fixed eagerly on a spot where he hopes to land —*i.e.* somewhat *beyond* his usual jumping distance. It is most helpful to have a piece of paper put in the centre of the pit about a foot further than he has ever jumped. It not only takes his eyes off the board, but draws him out. In order to gain mechanical accuracy, a mark should be made on the cinder-track. Behind this the jumper should start and, after a few yards run, plant his toe on it, continue at full speed up to the board, and then jump determinedly. In nine cases out of ten he will have taken-off behind the board, as can be seen by examining the track. Before starting for the next jump, the mark should be moved forward as many inches or feet as he took-off behind the board.

It is a great mistake to shorten or lengthen the stride in running up. It not only makes it impossible to acquire and practise mechanical accuracy in taking-off, but lessens considerably the impetus which is the *raison d'être* of the run-up. The length of the run-up should be between forty-five and fifty-five yards. Practice will soon discover the suitable length. A man's run-up to a long jump should be the facsimile of the first part of a hundred yards as run by him. The whole run should be a winding-up for the jump.

The reason for jumping high has been mentioned. The difference between a first-class and a moderate performer in this respect is most marked. It is possible to jump too high, just as a cricket ball may be thrown too high for length; but at the end of a run-up at full speed it is practically impossible. As a working rule, it is safe to advise a long jumper to jump as high as he can—*i.e.* much higher than he feels inclined.

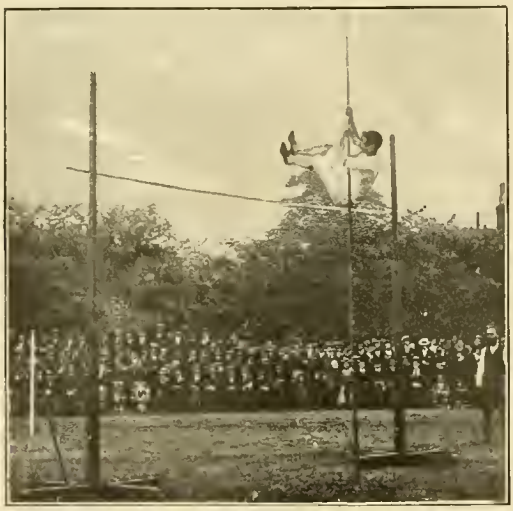
The best kind of shoes for long jumping are ordinary hurdling shoes with one or two spikes in the heel. It is useful to have a pair for practising with thickened heels, as the heel is planted with great violence on the ground in taking-off. *Bruised-heel* is a common complaint with long jumpers. Care should be taken that the pit is well dug up and softened before jumping, and that no rake, spade, or other edged tool is left near the pit, in case of a sprawl or fall out of the pit after landing. It is a good thing, especially in cold weather, to rub the legs and back well before starting work. A gentle sprint and two or three small high jumps as preliminaries should always be taken in order to get the muscles into working order and prevent them being strained or torn by the sudden concentrated effort implied in a long jump.

C. B. Fry.

POLE JUMPING—Owing to a few unfortunate accidents, usually resulting from lack of care in the selection of a suitable pole, this, one of the oldest of our English sports, has practically dropped out of the list of events of most sports-holding clubs. This is deeply to be regretted, as in addition to being a most popular item with spectators, it is in itself a splendid exercise demanding much all-round ability.

Broad Jumping with a pole was for many years a necessity, and subsequently a sport, in the Fen districts of Lincolnshire and Cambridgeshire, and from this doubtless the pole-jumping of the present day had its origin. It seems strange that broad jumping with a pole should never have found its way into our athletic programmes; but as sports-promoters are ever on the look-out for attractive novelties, it is possible that it may yet be seen. Though originating in the Fens, pole-jumping is now almost entirely confined to the Furness district of Lancashire, and is especially associated with the town of Ulverston, from the immediate neighbourhood of which most of our recent champions have sprung. Here it still retains its hold on the people, and may it long do so! He who would attain excellence in this branch of sport must be at once a jumper and a gymnast, and must have no lack of pluck, for strains and bruises are of common occurrence.

There are two distinct types of pole-jumping, the old and by far the more graceful type, and



Pole Jump.

the new, or what may be called the *gymnastic*, type. The **old type** of jumper, now rapidly becoming extinct, grasped the pole firmly in the lower hand slightly below or on a level with the jump he was about to attempt, took a longish run, and having planted the pole firmly in the ground about one foot in advance of a horizontal line drawn between the bases of the two uprights, sprang into the air, throwing his feet as high as possible and then with a twist raised his body clear of the lath, being careful at the same time to loosen his grip and throw back the pole before the lath became displaced.

In contradistinction to this, the **new type** of jumper, running slowly to the take-off, springs into the air, and the moment his pole assumes the perpendicular, climbs rapidly hand over hand up it, and with a quick lift raises his legs and body clear of the bar. This method, though demanding great ability, is, we think, more in the nature of a gymnastic display and should, we venture to suggest, be confined to such competitions. Though recognised as legitimate pole-jumping by the English Amateur Athletic Association, it has never been recognised or allowed by the A.A.A. of America.

To turn now to practical details. The first thing to do is to procure a good, strong, flexible pole as light as is consistent with safety, not less than eleven feet in height, made of ash or hickory. It should be thickest at the base, which should be shod with three steel spikes arranged in the form of a tripod, and these should be firmly secured by a metal ring. This gives a firmer grip than one spike. The pole should gradually taper from below upwards. The uprights should be square.

Take-off—The take-off should be selected with great care, and a pit of large dimensions provided on the landing side, which should be filled in with sawdust and earth. By these means many a jar and accident will be avoided. High jumping must be assiduously practised and also gymnastic exercises of all kinds, rope- and pole-climbing being essential.

Reginald Williams.

RUNNING—Before the days of organised athletics, runners were heard of who had the reputation of being able to beat their opponents at any distance. In the present days of highly specialised effort, a runner who essays all distances is likely to prove the master of none. One never hears to-day of a sprinter who can perform well at long distances, or of a long-distance runner who is anywhere near the front rank of sprinters; and the few all-round athletes who appeared in the early days of the athletic movement would, if they had been competing to-day, have been compelled to devote themselves to one particular class of distance if they desired to acquire championship honours. Nowadays, a runner is either a sprinter—that is, accustomed to run from 100 yards up to 300 yards at full speed—in which case the limit of his special abilities will probably be a quarter of a mile at the outside—or he may run the middle distances—that is, from a quarter to a half mile; or he may be a long-distance runner, with distances from a mile upwards. Men

cannot, of course, be measured by exact standards, and he who can run a mile well and he who can run a quarter may often meet together on even terms at a half; but for purposes of rough classification, to divide runners into the three classes of sprinters, middle-distance men, and long-distance men, is to draw the dividing lines as closely as nature will allow them to be drawn.

Sprinting is the name given to the running of short distances at "full burst." Sprinting is perhaps more popular, both with spectators and athletes, than any other class of race, and a sprint handicap at 120 or 150 yards is likely to produce the largest entry of all at a sports meeting. But although the number of mediocre sprinters is large, the number of really fine sprinters is very small, and it is seldom that a man reaches his best form until after two or three seasons of steady practice.

Success in sprinting comes more from the rapid repetition of the stride by bringing up the legs quickly than from artificial attempt to lengthen the stride. The more the runner practises "bursts" of speed the more he will find that his stride is naturally lengthening by his striding from the hips and not from the knees. The natural sprinter is nearly always a man of big thighs and strong back, and the capacity for attaining to really first-class form consists in being able to "put one's back into it," and to keep up a prolonged and vehement burst at high pressure throughout the whole distance one has to go. A great practical exponent of sprinting once expressed an opinion that to win a sprint one should "run like a madman." There is some truth in this: the sprinter has to learn to keep up an abnormal burst of speed or he will be left behind.

To come to practical directions, the sprinter must continually practise short bursts of speed; he must stride well from the hips so as to lose not an inch of his stride; should run as straight as an arrow goes from the bow; and should be careful not to throw his shoulders too far back, as this tends to shorten the stride: the rest must be left to natural capacity and to assiduous practice.

It is of immense importance to a sprinter to start quickly. Until about seven years ago the received method of starting was for the runner to stand on his toes with the right foot seven or eight inches behind the left foot so that it could be brought up quickly for the first stride, the body being kept square to the starting-line. Of late years most sprinters have taken to starting with both hands resting lightly on the starting-line. When the pistol is fired, the runner gathers himself up and darts forward, at the same time rising to the perpendicular. There can be no doubt that the new style is efficacious, as it is now almost universally adopted. It has undoubtedly rendered the starting of sprint races much easier and fairer, for while the runner has his hands on the ground he cannot "break away," from the mark, and if a runner "breaks away," he is, under the A.A.A. rules, put back a yard.

Frequent practising at starts and bursts and an occasional run over the full distance he is

FINISH OF A SPRINT.

training for, should be the regular work of the sprinter; above all, he should never run alone, but have some one to sprint with him. When a man sprints alone, he often gets slow and sluggish without noticing it.

A sprinter must do his best, by one form of exercise or another, to get hard and muscular without getting stiff; for stiffness is fatal to speed. It is undoubtedly a good thing to be well rubbed over the back and legs after each day's practice.

On the day of his race, the sprinter should always take a short "burst" on his way down to the starting post to warm the muscles.

Sprinting requires at least as many weeks' practice as any other form of running; a month, at shortest, is necessary to acquire one's best form.

Middle Distances—*The Quarter Mile*—A great many sprinters, after a little experience and with careful training, develop into fine quarter-milers. In fact, when a man is running four hundred and forty yards in less than 50 seconds, as many amateur runners have done and can do, he must obviously go at full speed nearly every yard of the distance. But there are many runners who are but indifferent sprinters and yet can do marvellous perform-

ances at a Quarter. The two best quarter milers of the present day, E. C. Bredin, of the London Athletic Club, and W. Fitzherbert, of the Cambridge U.A.C., are each of them good enough on their day to beat 49 seconds for a Quarter Mile, and yet as sprinters they are barely in the second rank. The same remark applied to L. E. Myers, the American, and H. C. L. Tindall, of Cambridge, the two best amateur quarter-milers of their day. From this it appears that it is fairer to describe a Quarter Mile as one of the middle distances, for all the men I have mentioned could run equally well at Six Hundred Yards and at Half a Mile. Still, the fact remains that in the Quarter Mile races two runners of an entirely different class often meet; the sprinter, who is strong enough to struggle home over a Quarter, and the middle-distance man, who is running his own distance.

The training for the distance should be entirely different for the two classes of men. The sprinter must be careful not to overdo himself and thus get jaded and slow, but he should frequently run spurts of three hundred yards, or thereabouts, to get used to prolonged effort, and must be very careful in his diet so as to preserve every ounce of his staying power. The regular middle-distance man must train differently: he is usually a lighter man than the sprinter, and he can stand more hard work, but when once he has got moderately fit, what he requires most is speed, and he must assiduously practice sprinting and starting to improve his speed.

Again, when it comes to running the race, the sprinter must use different tactics to the middle-distance runner. He must use his pace when he has got it, that is at the beginning of the race, for after he has covered the third of the distance he will find that his power of "making a burst" is all but gone; the middle-distance man, who can rely on being able to finish out and to keep his stride to the end, wants a pace-maker, some one who will pull him out in the early stages of the race. Let us illustrate these abstract principles by an example. Some of the great struggles of late years at a Quarter Mile have been those between Jordan, of Oxford, and Fitzherbert, of Cambridge: their races are and ever will be memorable historic contests. The Oxonian is a fine natural sprinter; the Cambridge man has only learnt to run short distances fast by assiduous practice: he is not a natural sprinter. The tactics for Jordan are to try and get away from his opponent early in the race; if he does not, his slower opponent can outstride him and cut him down at the finish, as he did in 1895 and 1896. In 1894 Fitzherbert let Jordan get well away from him, and was never able to get up to his shoulder. Many are the races, too, which Bredin has thrown away or jeopardised by starting like a snail, although he can finish like a lion.

The sprinter, then, who wishes to include the Quarter Mile in his repertory must recollect that, although he has to get hard and strong, it is upon his speed that he must rely; and at all hazards he must retain his dash. He can lay the foundation of his staying powers by walking, which hardens the legs and back, or even by rowing, or by lawn-tennis or any hard exercise; but when he begins to train for his races, he must be careful not to get slow and stiff by pounding round the path at longer distances. The middle-distance man can train for his Quarter as he trains for the Six Hundred Yards or the Half Mile, of which we shall now proceed to speak.

Six Hundred Yards—This is a very popular distance which is often run. The pure sprinter cannot last the distance, and the middle-distance men have it to themselves, but it is an interesting race, because a Half Mile race attracts many who are really long-distance runners with staying power and no speed except that which comes from a long natural stride; but a Six Hundred Yards race is necessarily confined to middle-distance men alone. To run fast at Six Hundred Yards, the half-miler has to be careful to push himself along either by a pace-maker or by learning by means of a watch-holder how fast he is going the first half of his distance.

The *Half Mile Race* produces perhaps the most interesting of all athletic contests. It lasts but two minutes, or thereabouts, and therefore cannot grow tedious, and it presents scope for staying power, judgment and spurting. While many long-distance runners can do fine performances at half a mile, they are bound to be outpaced by the really fine middle-distance runner. There are plenty of instances of men who, though good at a Quarter, have not sufficient speed to hold the sprinters, and good at a Mile, yet are unable to keep amongst the first flight of milers, and yet at Half a Mile are magnificent runners. It is unfortunate, therefore, that a Half Mile does not figure in the Oxford and Cambridge programme, as the middle-distance runner has little scope for his abilities at the Universities. There is of course a natural reluctance to interfere with the programme and with the chance it gives to strength, as distinct from speed, in the Weight-Putting, and Hammer-Throwing events, and it is also undoubtedly necessary to have an uneven number of events; but there are many who would not be sorry to see the number of events increased from nine to eleven by the addition of two races at 220 Yards and Half a Mile.

However, to return to the half-milers. The middle-distance men are bound to have a good deal of staying power, and should not be afraid to take a good deal of work. In practising, they must learn to run to a watch, that is, to keep going all through the race by learning to run the first quarter fast. If a man wants to run Half a Mile under two minutes, he should

do his first quarter in 58 seconds, and nothing can teach him to know that he is keeping up his pace better than the "running to a watch" held by his trainer. He should frequently run Quarter Miles and Six Hundred Yards in practice, and occasionally the full distance, starting to do his distances slowly when he begins his training, and gradually quickening up as he is approaching fitness and his best form. Nor must he forget to practise bursts of speed, as every runner is the better by improving his pace and by learning to make a sprint, but the main thing a half-miler has to achieve is to go strong and brisk in the early stages of the race. Many half-milers are inclined to be sluggish in the first stage, and for such the best tactics in a race are to start a runner who will "make the

Half-Mile Championship.

pace" for them. The pace-maker can run his first quarter in fixed time, and he will thereby draw out the half-miler, who will hang not far behind him, until he takes up the running after the half distance. The American, Kilpatrick, who holds the amateur "world's record" for Half a Mile, is rarely known to do a fast time without a pace-maker to draw him out.

The pace-maker in such contests should have orders to run the first quarter in about a second faster than the "crack" requires to do the same distance, and this is pretty sure to produce the desired effect.

One Thousand Yards and *Three Quarters of a Mile* are distances occasionally run. Experience has shown that the former is particularly a middle-distance event. Most half-milers can cover the additional 120 yards if called upon. A race at Three Quarters is usually chosen because it makes rather an open thing when a good miler and a good half-miler are matched at a distance which is half way between the two. At this distance the chances are all in favour of the miler, for three quarters of a mile is a distance generally beyond the powers of the middle-distance runner.

Long Distances—All distances from a Mile up to Four Miles are common at meetings at the present day, nor is a Five Miles Race by any means a rarity, and since paperchasing became popular, a Ten Miles Flat Race has formed part of the championship programme. It is hardly possible to separate long-distance runners into classes, and the only general remark that can be made as to the classification of long-distance men is that the lighter their weight the more likely are they to be able to spin over the long distance. The rules for getting fit for long distances are fairly simple; the runner must get down his weight, and do a lot of work. We do not of course mean to say that cases of men overworking themselves and getting stale are not common enough, but the long-distance runners succeed by their endurance and staying power, and are able to stand a lot of work, and every pound of superfluous flesh will tell in a long race.

It is by no means uncommon for a runner to hold the championship at One, Four, and Ten Miles in the same year, which should prove the point we contend for, that all long-distance men belong to one class. To win the championships at One and Four Miles in the same year the runner has to do both races in the same afternoon. The Ten Miles championship is run in the spring at the conclusion of the paperchasing season, at which time all the long-distance men are likely to be as fit and hard as only paperchasing can make them.

For a man to work up to his best form in long-distance races he must "run to a watch" in the way we have mentioned before. His trainer (or he himself after a season or two, for every man should soon learn to gauge his own strength and health) can judge on each particular day whether he should do a little more or a little less work, for this depends on the state of a man's health. It is a fatal mistake to attempt to get fit by doing too much work in a limited number of days. A slow and steady increase of work, which means doing the distance selected at a gradually increased pace, is the safest plan for success.

The runner who confines himself to the Mile race only must possess some considerable speed. The first quarter in a Mile championship is often covered in a minute or thereabouts. In 1885, when the amateur record was made by F. E. Bacon, the first quarter was covered in 58 seconds, and the first half mile in 2 minutes 5 seconds. As the distances get longer, scope is given to the man whose capacity consists almost entirely in being able to keep pegging

away. But for all long-distance running the road to success consists in steady training, a quantity of work and a rigid dietary.

Boys' Races—A word should be added as to running races for boys. It should be almost superfluous to say that growing lads should not be put to so severe training as men. The best foundation for training with boys is to let them have plenty of games such as Cricket or Football. By these they harden the muscles and improve the wind. We are no believers in open races for boys. Every boy should be encouraged to run in his own school sports in classes with boys of his own age, but in these school sports there should not be many races of a long distance, and no long races at all for young boys who so often have more energy and spirit than strength. Boys also should be encouraged at schools more than they are at present to practise the High and Long Jump and Pole Jump. They afford plenty of amusement and healthy rivalry and can do nothing but good, and it is as natural for a boy to leap as for a kitten to play. When jumping is taught in English schools, we shall see more and better jumping than is common in England at present.

MONTAGUE SHEARMAN.

STEEPLECHASING—For many years past no athletic sports programme has been considered quite complete without a steeplechase, and at country meetings especially this event provides more interest and amusement than any other. One would naturally have assumed that such encouragement would attract a larger number of cross-country runners to this undoubtedly good sport; yet not only have steeplechases of recent years at athletic meetings produced as a rule thin fields, but the class of competitor, with a few exceptions, has been distinctly poor. The explanation may lie in the fact that steeplechasers have enough discomforts to put up with in any case, and are not prepared to make themselves ridiculous for the amusement of the crowd by being asked to take almost impossible jumps. To a considerable extent sports-managers have only themselves to blame for driving distance runners on to the flat.

A good steeplechaser must combine speed, endurance, and jumping ability, a combination which many of our cross-country runners possess to a marked degree, and which would bring them the highest steeplechasing honours if they turned their attention to the sport. The steeplechase course is generally laid out on a grass enclosure, and comprises a number of artificial obstacles placed at intervals of about eighty yards, generally in the form of hurdles, which should not be too difficult, say three feet in height and tipped with furze. The *pièce de résistance*, however, is the water jump, a ditch about six feet wide by two and a half feet deep, the approach to which is guarded by a solid structure such as a fence, more thickly studded with furze than the other hurdles, and which must be *cleared* and not rushed.

The favourite steeplechasing distances are from

STEEPLECHASING.

three-quarters of a mile to two miles, the amateur championship being at the latter distance.

It is surprising to note how few competitors take the obstacles scientifically, that is fly and not jump them. The obstacles should be taken in the stride as in the hurdle-race, so that the runner alights on one foot and at once resumes his stride. The generality of steeplechasers jump the hurdles, often clearing them by several inches, thereby uselessly exhausting energy; but the real fatality of this method lies in the fact that the runner alights on both feet, coming practically to a dead stop and entirely getting out of his stride. It is evident that a recurrence of this at intervals of every eighty to one hundred yards is not only exhausting, but loses an immense amount of time, probably several seconds in a mile. There is no necessity to clear the ordinary hurdle, as, if the timber is topped, the furze will yield to the impact of the body. The chief attraction so far as the spectators are concerned, centres in the water jump, and it is here that the experienced steeplechaser is seen to greatest advantage. Unless he is a jumper of exceptional ability he never attempts to clear the ditch, but jumps into the middle of the water with arms and body slightly bent forward so that he may grasp the edge of the ditch with his hands, and spring out with a minimum loss of time.

There is usually not wanting the competitor who seeks to arouse the enthusiasm of the spectators by clearing the water jump, but the effort is very exhausting, and the exhibition steeplechaser is not to be taken seriously, as he seldom finishes in the first three. The usual rule of athletics as to passing applies to steeplechasing, but special care is needed in approaching the water jump, particularly if the men happen to be in a cluster. It is an unwritten law that the man just behind has the courtesy, to use a mild term, to swerve in his jump either to the right or left, otherwise a serious spiking accident is likely to occur. So many qualities combine to produce a good steeplechaser, that it is to be regretted that more good men do not apply themselves to cultivate the art.

A steeplechase across country differs in many respects from that described above, but primarily in the fact that it is held over country supposed to be open, and the obstacles encountered are natural and not artificial. The courses naturally vary in accordance with the country traversed, but care should be taken to make them as varied as possible; and to apply the term "cross-country" to some courses, mainly consisting of road, is a misnomer. In the cross-country steeplechase of the present day it is seldom that hedges or gates are cleared, though vaulting is an extremely useful accomplishment, and should be more cultivated than at present. Most runners get through a gap in a hedge, or take a ditch very gingerly, whereas with a little more pluck and determination the obstacle could be negotiated much more quickly, and with less personal injury. Racing for a gap is quite legitimate, provided the holder does not wilfully hang back with the object of impeding those behind. Further hints on cross-country running have been already given in an article under that heading.

HAROLD WADE.

THROWING THE DISC has had a precarious existence in Greece since classical times, but cannot be said to have been conformed to rule and formally introduced to the athletic world until the Olympic Games of 1896. Its obvious elegance deserved a better fate.

The disc is circular, having a diameter of 22 centimetres (about 8½ inches), and is composed of wood surrounded by a rim of iron. A nucleus of lead is let into the centre, bringing up the total weight to 2 kilogrammes (about 4½ lbs.).

The performer stands in a square of two metres and holds the disc in both hands above his left shoulder. The fingers of the right hand grip it tightly by the upper edge; those of the left merely support it. The left leg is advanced. Then the body is swung half round to the right, so that the face is turned towards the disc, the latter having been brought round by the right hand to a position above and behind the performer's head. At the same time, the right leg is put forward. It is this attitude which is depicted in the celebrated statue of the "*Discobolos*." The left leg is then brought swiftly to the front again, and the disc is hurled with all the swing of the body. The hand must at the moment of ejection be horizontal, so that the missile may traverse the air horizontally. The distance thrown at the Olympic Games was rather over 95 feet.

THROWING THE HAMMER has always suffered from diversity of rules. We need only concern ourselves with the A. A. A. and American codes, which compel the performer to throw from circles of nine and seven feet diameter respectively. The American circle has a raised rim to keep the thrower safely in. Under both sets of rules the hammer must weigh 16 lbs., must have a total length of not more than four feet, a handle of metal or wood, and a head of any metal. The Inter-University circle of thirty feet will, it is to be hoped, soon vanish, and may therefore be dismissed, as may also the Scotch or stationary method, which is of very limited application. The performer stands generally with his back to the direction in which he wishes to throw, with the head of the hammer resting on the ground outside the ring beside him. He obtains the impetus required by whirling the hammer round above his head as many times as he deems necessary, keeping his feet quite stationary. When he has obtained sufficient

THROWING THE HAMMER.

swing, he brings his whole body round with a jump (some performers contrive to gyrate twice or even thrice within the circle, but this practice is not recommended), keeping his arms and the hammer as far outstretched as possible, and having thus arrived at the front edge of the ring, he discharges the missile. The cardinal points to be observed are (1) keeping absolutely sta-

tionary while getting the swing on the hammer, (2) rapidity in jumping round (most important of all), and (3) continuous command over the weapon, so that it may be thrown with the whole force of the body, and not merely with the arms.

G. S. ROBERTSON.

TUG OF WAR—[*See* MILITARY SPORTS].

WALKING, LONG-DISTANCE—Of recent years walking has fallen into desuetude, and nowadays it is rare indeed to hear of feats of endurance approaching those of Captain Barclay or Mr. Ross. This is the age of cycling, nor can it be denied that cycling is a most fascinating and rapid means of getting about. In these days of hurry, the fact of a man's being able to compass

WALKING RACE.

on the wheel fifteen miles an hour without any distress to himself, constitutes an incontrovertible argument in favour of the bicycle. At the same time, from the point of view of physical condition, there can be no comparison between the cyclist and the pedestrian, who, in six hours, while the former is travelling his seventy or eighty miles, is content to cover his twenty-five miles on foot.

The late Sir John Astley, one of the keenest of sportsmen, brought long-distance walking into great prominence a few years ago, when some wonderful performances were accomplished. Since his death, however, walking has relapsed into its former oblivion. Still, it is sure sooner or later to revive. Of track-walking the writer does not propose to treat. It is entirely then for the benefit of amateurs who may feel inclined to attempt a long-distance walk that the following hints, the result of some experience, are intended.

Patient and systematic training is the chief consideration: to get condition and keep it. It is of the first importance that the feet should be good. Good feet are indispensable, and without them long-distance walking must never be attempted. Assuming, then, that the intending walker has naturally good feet, they must in addition be well cared for. It is the greatest mistake to suppose that a horny foot is durable in proportion. The skin should be supple and pliant. After the bath the feet must be thoroughly dried, well hand-rubbed, then soaped all over. Some advocate soft soap, but good brown soap is preferable. The socks, too—*lambswool* is the best material—should be well soaped. Strong *shooting boots* or *shoes* are to be recommended, having a long, low heel, with plenty of nails (but large nails are a mistake) at the toes and sides. It is also well to bear in mind the maxim "The heavier the man, the stronger the boot." Flannel underclothing is indispensable.

Training — The preparation should be gradual. The man who attempts only fifteen miles on the first day will at the end of a week cover thirty with infinitely greater ease. The feet must, on returning home, be the first care. Excessive tubbing is not recommended; it is far better to rub them well first with a damp towel and then with a dry one, followed by more hand-rubbing. Regular hand-rubbing also for the legs, back, and loins is the great secret of keeping in condition.

Diet—A man in really hard work can eat

anything. The less he drinks, no matter what the liquor, the better; and the sounder his condition, the less thirsty he will feel. During the early days of training, a man naturally perspires a great deal, becoming, in consequence, very thirsty, a craving that should, however, be fought down. It is an excellent plan to rinse the mouth with water. Sluicing the arms up to the elbows in water will also be found to relieve the thirst to an almost incredible degree: and water which is not fit to drink may still be utilised by standing in it above the ankles for a few minutes. The feet will soon dry, and if the pedestrian keep going, he will suffer no ill effect.

As a practical instance of a long-distance walk, the writer undertook on one occasion to walk from Derbyshire to the north of Perthshire, a distance of 347 miles, in a week. He had trained, it is true, to a certain extent, though not by any means as carefully as he would now, were he fit to undertake what he then accomplished. At the end of the first day, after he had covered fifty-eight miles, his feet went completely to pieces, which may be partly attributed to the fact that for the last seventeen miles the road was paved with great cobblestones. The second day, on which he started in acute pain, put another forty-six miles to his credit; on the third his feet gradually improved, and he ultimately arrived at his destination with three and a half hours to spare. It is significant, as bearing upon the principle of abstinence advocated above, that the writer's bill for wine and spirits during that week did not amount to half a sovereign, and this included a plentiful dose of neat brandy, when on the second day he fainted three times.

FRED COTTON.

WEIGHT PUTTING—The weight should weigh 16 lbs., and in England must be of iron. It is put by A. A. A. rules out of a seven-foot square, in America from a seven-foot circle with a raised rim. Oxford and Cambridge use a ten-foot square. The put is measured in England along a perpendicular, from the pitch of the shot on the side, or side produced, of the square; consequently crooked putting is as disadvantageous in England as it is advantageous in America.

Excellence in shot-putting, as in hammer-throwing, depends entirely on the capacity to bring the weight and strength of the body to bear upon the missile. To acquire this, the elbow of the arm which supports the shot, should be kept directly below the hand, and the hand close to the shoulder, which it should not leave till the very instant of discharge. Further, the performer should stand sideways in respect of the front side of the square, keeping the right shoulder and the shot well back, and being careful to rest the whole weight of shot and body on the right leg. The left leg is raised and held in front to balance the body. A hop forward is taken in this position, the right shoulder being kept as far back as ever; then by a rapid twist of the whole body, the right side and leg are brought to the front, and the shot is propelled. This twist corresponds to the circular jump in hammer-

PUTTING THE WEIGHT.

throwing: and in both cases, rapidity and the continuous application of all available strength and weight to the missile are of the highest importance.

G. S. ROBERTSON.

GLOSSARY.

Amateur Athletic Association—The A.A.A. was founded at Oxford on April 24th, 1880, when the representatives of the chief clubs met and formed a federation. It is the governing body in all athletic matters, and every athletic meeting must be held under its rules. It has taken the place which the Amateur Athletic Club, founded in 1866, tried, but failed, to fill. All the championship contests are now held under its supervision. [*See* Rules *infra.*]

Cinder-track—A running or cycling path made as follows: The surface is dug out to the depth of 12 or 18 inches, according to the soil. Some 6 to 8 inches are then filled with brick rubbish or large gravel. Above this are placed 3 or 4 inches of rough cinders or clinkers, and finally 3 inches of fine cinders. Amongst famous running tracks are, in London, Stamford Bridge, Lillie Bridge, Catford Bridge, and Queen's Club; Aston Manor at Birmingham; Iffley Road at Oxford, and Fenner's at Cambridge.

Consolation Race—A race at the close of an athletic meeting, for which all may enter without extra fee who have competed in previous events but have failed to win a prize. The character of the race varies, but it is usually a sprint of 220 yards.

Corks—Small cylinders, usually, but not always, made of cork, held in the hand to enable the fist to be clenched without straining fingers or palms.

Dead-heat—The result of a race in which two or more competitors reach the finish exactly together.

Event—A completed race, including preliminary *Heats* (*q.v.*), which are not in themselves "events."

Final—[*See* HEAT].

Flights—Each leap that has to be taken over a hurdle, and therefore, by extension, each hurdle, is sometimes called a flight. In the ordinary hurdle race there are ten flights.

Fly—To take the hurdles in the stride without pausing, in contradistinction from jumping them.

Foul—A wilful jostling, crossing, or obstructing of one competitor by another. Also used as a verb. [*See* Law 18.]

Hand-spring Start—A method of starting only employed in the shorter races. The competitor stands, or rather crouches, with his fingers, or corks, upon the line and his feet and body behind it. The first in England to succeed with it was T. L. Nicholas, of Monmouth, the champion quarter miler of 1890.

Handicap—(1) The start which a man gives to another or receives from him. (2) A race in which men receive or give starts. Contrasted with *Scratch Race* (*q.v.*). (3) As verb, to assign starts to competitors in proportion to their capacity.

Heat—A division of a race in which the competitors are too numerous to run all at once. The race is decided eventually by the winners (or winners and seconds) running together in a Final Race or Heat.

Heel and Toe—A description of fair walking, in which the heel of the walker comes to the ground before the toe. It is also sometimes used in a sense equivalent to that of the old "*Toe and Heel*," which meant that "as the foot of the back leg left the ground and before the toes had been lifted, the heel of the foremost foot should be on the ground."

Lap—One complete circuit of the track.

Lifting—Unfair walking, the toe of the back foot coming up before the front heel is down.

Limit Man—The competitor with the longest start in a handicap race.

London Athletic Club—The L.A.C. was founded under another title in 1863, but in 1866 took its present name. Its headquarters are at Stamford Bridge.

Marksman—The official who is responsible for placing competitors upon the proper "mark," which shows their start and the point from which they race.

Mixing—A deliberate attempt to put in a few running strides when in a walking race. To be distinguished from "Lifting," which may be accidental.

Novice—A competitor is a novice if he has never won a prize in the *class* of event for which he is competing, *e.g.*, a quarter-mile champion might be a novice at a walking race, but not in a mile race, even though he had never before run the distance.

Pacing—Going in front so as to quicken the speed at which the race is being run, or at which some particular competitor is running.

Penalise—Strictly speaking, a penalty is a minus handicap, *i.e.*, the man who is giving the other competitors starts, is placed behind the line from which the distance to be run is reckoned. This method of handicapping is usually employed towards previous winners, and is most common in hurdle races.

Pit—The space hollowed out beyond the board which limits the *Take-off* (*q.v.*) in the Long Jump. The result is that if the competitor over-run the line, he cannot get a jump at all.

Run-in—The distance from the last hurdle to the finish of the race.

Scratch Line—The mark from which the length of any race is measured.

Scratch Man—The competitor who gives starts, but receives none from any. Often called simply "Scratch."

Scratch Race—A race in which no competitor gives or receives a start.

Shot—Another name for the Weight.

Shot—A man is said to be "shot on the post" when a competitor just dashes by him as he eases for the finish, or fails from exhaustion.

Side Stride—The common method of taking the High Jump, which consists of running from the side and getting one leg over before the other.

Spin—A practice run.

Sprint—(1) A race whose whole distance can be run at full speed, including the 100 and 220 yards, and, in some opinions, the quarter mile. (2) As verb, to run for a little way at top speed, not only in a short race, but even in a long one, in order to pass or dishearten an opponent.

Standard—The time or distance assigned to each event at a championship meeting, by beating which a competitor becomes entitled to a medal.

Straight—The section of the track between the last bend and the winning post.

Strings—(1) In a hundred yards' race the competitors run side by side between strings fastened to stakes along the course. The width between the strings must not be less than 4 feet, and the stakes not less than 30 feet apart. [*See* Law 33.] (2) "First," "second," and "third" strings are the first, second, and third men chosen to represent a club in any event.

Take-off—The spot from which a competitor rises for the high, or long, jump. The term is also used sometimes for the style of rising from the spot.

Tape—The line held across the track at the winning post, which competitors must touch. It is now general to fasten a thread from side to side, which is broken by the leader. Frequently called the "Worsted."

Waiting—Running behind another man, allowing him to make the pace, and reserving the energies for the finish.

LAWS AND RECOMMENDATIONS OF THE A. A. A.

(1) Laws

FOR ATHLETIC MEETINGS AND COMPETITIONS.

(Rule XXIV. of the Constitution of the A.A.A. enacts, "That if any Club advertise their Sports 'under A.A.A. Laws' and then violate the said Laws, such Club shall be dealt with as the General Committee of the A.A.A. shall think fit.)

1. All competitions must be limited to Amateurs. This Law does not interfere with the right of any Club to refuse an entry to its own Sports.

As to the Qualification of Competitors.

"An Amateur is one who has never competed for a money prize or staked bet, or with or against a professional for any prize, or who has never taught, pursued, or assisted in the practice of Athletic exercises as a means of obtaining a livelihood."

The following exceptions shall be made to this Law, viz:—

(*a*) Amateur athletes shall not lose their amateur status by competing with or against professional football players in ordinary Club matches for which no prizes are given, or in Cup Competitions permitted by the National Football Associations or Rugby Unions of England, Ireland, Scotland or Wales, providing that such competitions or matches form no part of, nor have connection with, any Athletic Meeting.

(*b*) "Competitions at arms between Volunteers and Regulars shall not be considered as coming within the scope of the A.A.A. Laws."

(*c*) "Competitors in Officers' Races at Naval and Military Athletic Meetings (such races being for officers only, and for which money prizes are not given) shall be exempt from any of the laws of the A.A.A. disqualifying runners for competing at mixed meetings."

(*d*) The "Championship of the Army" Race at the Aldershot Sports shall be exempted from the effect of this Law.

(*e*) No person must be allowed to compete while under a sentence of suspension passed by the A.A.A., National Cyclists' Union, Amateur Swimming Association, Amateur Gymnastic Association, Scottish A.A.A. or Irish A.A.A.

(*f*) No one shall be allowed to compete at any meeting held under the Laws of the A.A.A. as "unattached" for more than one season.

(*g*) A paid handicapper is not a professional.

(*h*) A competitor who asks for $\left.\begin{matrix}\text{and}\\\text{or}\end{matrix}\right\}$ receives expenses ceases to be an amateur.

As to Prizes.

2. No "value" prize (*i.e.* a cheque on a tradesman) must be offered.

3. No prize must be offered in a Handicap of greater value than £10 10*s*.

4. Every prize of the value of £5 or upwards must be engraved (when practicable) with the name and date of the Meeting.

5. All prizes shall be of the full advertised value, that is, without discount, and must be publicly presented on the grounds on the day of the Sports.

6. In no case must a prize and money be offered as alternatives.

Betting.

7. All open betting must be suppressed.

Advertisements.

8. All Clubs must hold their Sports "under the Laws of the Amateur Athletic Association," and so advertise them on all Prospectuses, Entry Forms, Programmes, &c.; and *must* have printed on their Entry Forms "the definition of an Amateur." (*See Law* 1.)

9. That all affiliated clubs shall place on the advertisements, programmes, prospectuses, &c., of their meetings a statement that the club is so affiliated; and that all unaffiliated clubs or managing bodies to which a permit has been granted, shall also so state that the permit has been granted.

Entries.

10. Sports Committees may reserve to themselves the right to refuse any entry, without being bound to assign a reason; or to disqualify a competitor at any time if his conversation or conduct is unbecoming, or if it is shown that his entry was made under false pretences.

11. Entries shall not be tendered or accepted without the stipulated fees. Any competitor winning a first prize in an open handicap shall be penalised for all handicaps in which he may compete during the four days following such wins, Sunday not included. (The scale of penalties may be obtained from this Association.) The penalties not to apply to the scratch mark. No person, other than the handicapper, shall be permitted to alter the starts or to accept additional entries after the starts have been published. Competitors must notify to the Judges before the race is run that they have incurred a penalty, otherwise they will be disqualified and render themselves liable to suspension. Handicappers to state on their Handicaps up to what date they are made, which must be published on the programme. No one shall be permitted to start for a scratch race unless his name is printed on the programme, nor for a handicap event unless his name and handicap allowance are so recorded.

12. Competitors in Handicap Competitions shall be required to send with their entries full and definite particulars as to their last three performances (if any). No club shall be affiliated to the Association or registered as "approved" unless it agrees to adopt the A.A.A. Entry Form.

13. All entries shall be made in the real name of the competitor, and this name shall appear on the programme.

Youths and Novices

14. Competitors in Youths' races must state their age and previous performances, and, if required, must furnish certificates of birth. Races for Youths, other than club races, shall be confined to boys under 15, resident for three months prior to the sports within a radius of three miles from the ground of the promoting club, and entries from boys under this age shall not be accepted for open events. This rule not to apply to boys attending schools and competing within 20 miles of Charing Cross, London. The age of boys (months and years) must appear on the programme of the day. For Novices' races, a novice is held to be one who, at the time of competing, has never won a prize in a similar class of competition—*i.e.* winning a prize for walking would not disqualify for running, or *vice versa*; but winning a prize for running any distance would disqualify for running. (N.B.—The clause as to Novices does not apply to School and Boys' races.)

Protests.

15. All Protests against a competitor or against a competitor's qualification to compete, shall be made to the Secretary of the Club, in writing, before the prizes are distributed; and if the protest shall not be made good within one calendar month the prizes shall be awarded. Every protest must be accompanied with a deposit of five shillings, which shall be forfeited in case the same shall appear upon investigation to have been made upon no reasonable ground.

Stations.

16. In Handicaps, stations shall be awarded according to the number on the programme.

Attendants.

17. No attendant shall accompany any competitor on the scratch (except in cycle races) nor in the race; nor shall a competitor be allowed, without the permission of the Judges, to receive assistance or refreshment from any one during the progress of a race. In cycle races attendants will be allowed for the sole purpose of lending assistance in starting. Any attendant who steps or follows the machine over the mark of the competitor whom he is assisting to start will cause such competitor to be disqualified.

Fouling.

18. Wilfully jostling or running across or obstructing another, so as to impede his progress, shall disqualify the offender.

Starting.

19. All questions as to starts shall be in the absolute discretion of the starter. All races (except time handicaps) shall be started by the report of a pistol. A start shall only be made to the actual report of the pistol. The starter shall place the competitors on their allotted marks, and shall, if necessary, have the assistance of marksmen for this duty. No competitor shall touch the ground in front of his mark with any part of his body. If any one competitor overstep his mark before the pistol has been fired the starter shall put him back one yard for distances up to and including 220 yards, two yards up to and including 440 yards, three yards up to and including 880 yards, and five yards up to one mile or more. These penalties to be doubled for a second offence, and disqualification to follow a repetition of the same offence. (Committees of Sports are specially desired to print this rule *in extenso* on their Sports' Programme.)

Walking Races.

20. In walking races, cautions and disqualifications shall be left to the decision of the judges of walking,

who may appoint assistants if necessary. A disqualified competitor shall at once leave the track.

The High Jump and Pole Jump.

21. Each competitor shall be allowed three jumps at each height. Crossing the scratch without displacing the bar shall not count as one jump. All measurements shall be made from the ground to the centre of the bar. In the High Jump neither diving nor somersaulting shall be permitted. In the pole jump three attempts, even if the cross-bar be not displaced, shall count as one jump.

The Broad Jump.

Each competitor shall be allowed three jumps, and the best three competitors of the first trial shall be allowed three more tries each for the final. The farthest jump of the six attempts shall win. If any competitor fall back or step back, after jumping, or crosses the taking-off line with either foot, or so swerves aside that he pass beyond the taking-off line, such jump shall not be measured, but it shall be counted against the competitor as one jump. All jumps shall be measured to the taking-off line from the edge of the heel-mark nearest that line, along a line perpendicular to that line.

Steeplechasing.

22. For steeplechases the hurdles shall not be higher than 3 ft. Every competitor must go over or through the water; and any one who jumps to one side or the other of the water jump shall be disqualified.

Throwing the Cricket Ball.

23. In throwing the cricket ball, the distance thrown shall be calculated from the centre of a scratch line; and the thrower, in delivering the ball, shall not cross such scratch line. Three tries only shall be allowed, and crossing the scratch shall count as one try.

Winners of Trial Heats.

24. The winners of trial heats must compete in the finals, unless the consent of the Judges to their abstention has been obtained, or become liable to suspension.

Bye-laws and Regulations.

25. That the N.C.A.A.A. and M.C.A.A.A. and the Southern Committee have power to make and enforce bye-laws and regulations in their respective districts, subject to the veto of the General Committee of the A.A.A.

26. That the Secretary of every race meeting shall send a marked copy of the programme of the meeting to the Secretary of the A.A.A. division within which the meeting is held; and in the event of a mixed meeting, also to the Secretary of the local centre of the N.C.U. These programmes are to be filed and to be open for inspection by all athletes at reasonable hours.

27. That all club handicaps shall be made from the actual scratch man in the race.

(2) Recommendations.

In addition to the foregoing, the following Rules for Competitions and the Management of Athletic Sports, adopted by the Amateur Athletic Association, are recommended to clubs holding sports under the Laws of the A.A.A.:—

Officials.

28. The officials of a meeting shall consist of: A committee, in whose hands shall be placed all matters which do not relate to the actual conduct of the meeting itself, and who shall have a final decision in all cases not provided for in the rules of the meeting.

Two or more judges, whose joint decision shall be final in every competition, and with whom shall rest the power to disqualify any competitor.

A referee, who shall decide in the event of a difference of opinion between the judges. The decision of the referee shall be final in all cases.

Two or more stewards, or clerks of the course, whose business shall be to call out the competitors for each event, and to assign to each his distinctive badge.

One or more special judges of walking, a timekeeper, a starter, and one or more marksmen.

Stations.

29. Competitors in level races shall draw lots for their respective places on the post before leaving the dressing room. Each competitor shall be supplied with and wear during each contest a distinctive number corresponding to his number in the programme.

30. Only the winners of the trial heats (first round) in sprint handicaps run over a stringed track shall be eligible for further competition. In cases where the track is not stringed and in distance races the first and second, or first, second, and third, may compete in second round or final heats, at the option of the judges.

Track Measurements.

31. All tracks shall be measured 12 inches from the inner side of the path.

Clothing.

32. Every competitor must wear complete clothing from the shoulders to the knees (*e.g.*, sleeved jersey and loose drawers).

Any competitor may be excluded from aking part in the sports unless properly attired.

Straight Sprint Races.

33. Straight sprint races shall be run on a part of the cinder path or grass so staked and stringed that each competitor may have a separate course. The width between the strings shall not be less than 4 ft., and the stakes shall not be less than 30 ft. apart.

Hurdle Races.

34. The hurdle race shall be over 10 flights of hurdles on a level grass course of 120 yards straight. The hurdles shall stand 3 ft. 6 in. from the ground, and shall have level toprails, and shall be placed 10 yards apart. The first flight of hurdles shall be 15 yards from scratch. Each competitor shall have his own line of hurdles, and shall keep to that line throughout the race.

Throwing the Hammer and Putting the Weight.

35. The hammer shall be thrown from within a circle of 9 ft. in diameter. The head of the hammer shall be of iron and spherical, and the handle shall be of wood. The head and handle shall weigh together 16 lbs. The total length of the hammer shall not be more than 4 ft. Each competitor shall be allowed three throws, and the best three competitors of the first trial shall be allowed three more throws each. The farthest throw of the six shall win. All distances shall be measured from the circumference of the circle to the first pitch of the hammer along a line drawn from that pitch to the centre of the circle.

36. The weight shall be put from the shoulder with one hand only, and without follow from a 7 ft. square. The weight shall be of iron and spherical, and shall weigh 16 lbs. All puts shall be measured perpendicularly from the first pitch of the weight to the front line of the square, or to that line produced. Each competitor shall be allowed three puts, and the best three competitors of the first trial shall be allowed three more puts each. The farthest put of the six shall win.

37. In throwing the hammer and putting the weight, crossing the scratch shall count as a try.

Tug-of-War.

38. The teams shall consist of equal numbers of competitors. The rope shall be of sufficient length to allow for a "pull" of 12 ft., and for 12 ft. slack at each end, together with 4 ft. for each competitor; it shall not be less than 4 in. in circumference, and shall be without knots or other holdings for the hands. A centre tape shall be affixed to the centre of the rope, and 6 ft. on each side of the centre tape two side tapes shall be affixed to the rope. A centre line shall be marked on the ground, and 6 ft. on either side of the centre line two side lines parallel thereto. At the start the rope shall be taut, and the centre tape shall be over the centre line, and the competitors shall be outside the side lines.

The start shall be by word of mouth. During no part of the pull shall the foot of any competitor go beyond the centre line. The pull shall be won when one team shall have pulled the side tape of the opposing side over their own side line. No competitor shall wear boots or shoes with any projecting nails, springs, or points of any kind. No competitor shall make any hole in the ground with his feet, or in any other way before the start. No competitor shall wilfully touch the ground with any part of his person but his feet. If the competition is for teams limited in weight, each competitor shall be weighed before the start. The final heat shall be won by two pulls out of three.

Programmes, &c.

39. The A.A.A. recommend that a programme of any proposed meeting (showing the entrants for, and the starts allotted in each event) shall be forwarded by post to each entrant, to the address given in his entry form, and shall be posted not later than the day before the day appointed for the meeting, or that such a programme as aforesaid shall be advertised the day next before the day appointed for the meeting in one of the public papers circulating in the district of the proposed meeting.

40. It is recommended that all athletic clubs and sports' committees have the following notice conspicuously printed on their entry forms and programmes.

> "The prizes offered at this meeting will be awarded subject to the statements of previous performances given on the entry forms being strictly accurate."

THE FOLLOWING RULES MUST BE OBSERVED AT ALL ATHLETIC MEETINGS WHERE CYCLING EVENTS ARE INCLUDED IN THE PROGRAMME.

All Sports and Festivals throughout England and Wales advertised and carried out as Athletic Sports shall, as regards the general conduct of such Athletic Meetings, be under the Laws and control of the A.A.A., but all Cycle Races competed for at such meetings shall be run under the rules and regulations of the N.C.U., and any competitor in such races shall as regards his entry, and whilst actually competing in any such Cycle Race, be amenable to the N.C.U., as regards all future suspension or disqualification.

On the other hand, all Sports and Festivals advertised and held as Cycle Meetings shall as regards their general conduct, be under the control of the N.C.U., but all Foot Races, or other description of Athletic Sports as at present understood, shall be held under the Laws and Regulations of the A.A.A., and any person offending as to entry or conduct whilst actually competing shall, as regards all future punishment, be dealt with by the A.A.A.

The decision of the Judges or Referee at Athletic Sports or joint meetings to be final, and without appeal to either Association.

The N.C.U. also undertakes not to sanction any professional Cycle Races at any meetings where Foot Races or other Athletic Sports form part of the programme.

In cases where Cycle Races shall be held under N.C.U. Rules at meetings held under the management of clubs affiliated to the A.A.A., the N.C.U. will not (except at the invitation of the A.A.A. club) make any order upon the Committee of the A.A.A. club to alter their decision upon any matter in which the Committee of that club have already adjudicated.

All joint Race Meetings shall be advertised to be, and shall be held under the rules of both Associations.

All suspensions by either body to be binding on the other body.

If a permit be refused by either body to any privately-promoted or speculative meeting, or one that is considered objectionable, it shall be against the laws of both bodies for that meeting to be subsequently, directly or indirectly, carried out under the management of an affiliated club of either the A.A.A or N.C.U.

Any club refused affiliation by the A.A.A. or N.C.U. shall be ineligible for affiliation to either body without the consent of the other.

That any club after having been members of either body, shall not be elected to the other body, nor granted permits for sports, until communication be made as to the cause of such club's retirement.

N.B.—Clubs affiliated to the A.A.A. and N.C.U. are not required to obtain permits from either body to hold Athletic or Cycling events, but non-affiliated clubs or meetings registered under Rule XVIII. of the A.A.A. code must obtain a similar registration certificate from the N.C.U., for which application should be made to the Hon. Sec. N.C.U., 57 Basinghall-street, London, E.C.

Infringement of A.A.A. Laws.

Any infringement of A.A.A. Laws, or any other malpractice connected with Athletics, should immediately be notified to the Secretary or the representative of the proper Local Association, or to the Honorary Secretrry of the A.A.A. The Amateur Athletic Association undertakes to bear the expense of all necessary prosecutions in the case of charges preferred by an Affiliated Club.

EXTRACTS FROM THE A.A.A. RULES, OF IMPORTANCE TO ATHLETES.

Rule XIII.—The Association strongly deprecates the selling of prizes, and the Committee is instructed to take such action as they may think necessary when such sales are brought under their notice.

Rule XIX.—Any person wilfully competing against one who is under sentence of suspension shall be himself suspended until the expiration of such sentence or for such longer period as the Committee may think fit.

Rule XXII.—Any one taking part in a competition to the winner of which a prize and money are offered as alternatives shall be suspended for such time as the Committee may think fit.

Rule XXIX.—No one shall be allowed to compete at any meeting held under the Laws of the A.A.A. as "unattached" for more than one season.

Rule XXIII.—That the General Committee, the Southern Committee, and the Committee of the N.C.A.A.A. and M.C.A.A.A. shall have power to reinstate any Amateur who shall have competed for money or against a Professional in ignorance of the Laws of the A.A.A.; or shall have otherwise offended against or broken the said Laws.

That no application for requalification to compete under A.A.A. Laws shall be considered unless accompanied by a deposit of 5*s.*, such deposit to be only returnable to the applicant at the discretion of the Committee.

Rule XXVII.—(*a*) All clubs affiliated to the A.A.A. shall have the following rule incorporated into their

rules, viz. : "That the Committee shall have the power to expel any member whose subscription is twelve months in arrear, provided a notice in writing shall have been sent to such member by a registered letter, addressed to his last known address, informing him of the proposed action of the Committee."

(*b*) The name and address of any person so expelled from a club in the Southern district shall be sent to the Hon. Secretary of the A.A.A. ; and of any person so expelled from a Club in the Northern or Midland districts, to the Secretaries of the N.C.A.A.A. and M.C.A.A.A. respectively, and shall be entered by each of such officers in a book (to be called the "Black Book") kept for that purpose. Every person whose name has been so entered in a Black Book shall be suspended from competing at a meeting held under A.A.A. Laws until the liability causing his said expulsion shall have been discharged.

N.B.—Club Secretaries sending up a name for entry in a Black Book must send with each name the Post Office Receipt for the registered letter sent to such person, or the name will not be inserted.

New Record Rules.

1. A Record can only be made in a *bonâ fide* competition (either level or handicap) which has been duly fixed and advertised before the day, and is included in the printed programme, together with the names of the entrants for the event.

2. No one, whether entered or not, may join in the competition after it has been started.

3. In foot races the time must be taken by one or more competent timekeepers, the watch and watches must be proved to be accurate, and the course measured (12 inches from the inner edge of the track) by a surveyor or qualified member of the Association.

4. In competitions other than foot races, the distance must be measured at the time and certified by a surveyor or qualified member of the Association.

Records

Passed by the General Committee to end of 1895.

Running.

Distance.	Name. Record made by	Time. H.	M.	S.	Date.	Club of which a Member.
Yards.						
100	A. Wharton			10	3 July, 1886	Darlington College.
	C. A. Bradley				1 July, 1893	Huddersfield.
	A. R. Downer				4 May, 1895	London A. C.
120	W. P. Phillips			$11\frac{4}{5}$	25 Mar., 1882	,,
	C. A. Bradley				28 April, 1894	Huddersfield.
	A. R. Downer				11 May, 1895	London A. C.
120 Hur.	Godfrey Shaw			$15\frac{4}{5}$	6 July, 1895	,,
150	C. G. Wood			$14\frac{4}{5}$	21 July, 1887	Blackheath H.
	C. J. Monypenny				27 Feb., 1892	Cambridge U. A. C.
200	E. H. Pelling			$19\frac{4}{5}$	28 Sept., 1889	Ranelagh H.
	A. R. Downer				11 May, 1895	London A. C.
220	C. G. Wood			$21\frac{4}{5}$	25 June, 1887	Blackheath H.
300	C. G. Wood			$31\frac{2}{5}$	21 July, 1887	,,
440	H. C. L. Tindall			$48\frac{1}{2}$	20 June, 1889	Cambridge U. A. C.
	E. C. Bredin				22 June, 1895	London A. C.
*440 Hur.	T. M. Donovan			$58\frac{4}{5}$	7 Aug., 1894	Queen's College, Cork.
600	E. C. Bredin	1		$11\frac{2}{5}$	10 June, 1893	London A. C.
880	F. J. K. Cross	1		$54\frac{2}{5}$	9 Mar., 1888	Oxford U. A. C.
1000	W. Pollock Hill	2		$15\frac{4}{5}$	8 May, 1889	,,
1320	No reliable record.					
Miles.						
1	F. E. Bacon	4		17	6 July, 1895	Ashton & Reading A.C.
$1\frac{1}{2}$	S. Thomas	6		$53\frac{2}{5}$	13 May, 1893	Ranelagh H.
2	W. G. George	9		$17\frac{2}{5}$	26 April, 1884	Moseley H.
3	S. Thomas	14		24	3 June, 1894	Ranelagh H. & L.A.C.
4	E. C. Willers	19		$33\frac{4}{5}$	10 June, 1894	Essex Beagles.
5	S. Thomas	24		$53\frac{2}{5}$	24 Sept., 1893	Ranelagh H.& L.A.C.
6	,,	30		$17\frac{4}{5}$	22 Oct., 1892	,,
7	,,	35		$36\frac{4}{5}$	,, ,,	,,
8	W. G. George	40		$57\frac{2}{5}$	28 July, 1884	Moseley H.
9	,,	46		12	7 April, 1884	,,
10	,,	51		20	,, ,,	,,
12	S. Thomas	1	2	43	22 Oct., 1892	Ranelagh H. & L.A.C.
15	,,	1	22	$15\frac{2}{5}$	,, ,,	,,
20	G. Crossland	1	51	54	22 Sept., 1894	Salford H.
25	G. A. Dunning	2	33	44	26 Dec., 1881	Clapton Beagles.
30	J. A. Squires	3	17	$36\frac{1}{2}$	2 May, 1885	London A. C.
40	G. A. Dunning	4	50	12	26 Dec , 1879	Clapton Beagles.
50	J. E. Dixon	6	18	$26\frac{1}{5}$	11 April, 1885	L. A. C. and Spartans.
100	No records					

* Hurdle Race on Grass, over ten 3 ft. hurdles not less than thirty yards apart.

Walking.

Distance.	Name. Record made by	Time. H.	M.	S.	Date.	Club of which a Member.
Miles.						
1	W. J. Sturgess		6	$39\frac{1}{5}$	24 Aug., 1895	Polytechnic H.
†2	,, ...		13	44	25 Sep., 1895	,,
3	,, ...		21	$16\frac{4}{5}$	28 Sep., 1895	,,
4	,, ...		29	$1\frac{3}{5}$	19 Oct., 1895	,,
5	,, ...		36	27	,,	,,
6	,, ...		43	$58\frac{3}{5}$	,,	,,
7	,, ...		51	27	,,	,,
8	,, ...		58	56	,,	,,
9	H. Curtis	1	11	$14\frac{2}{5}$	27 Dec., 1890	Highgate H.
10	,, ...	1	19	$27\frac{3}{5}$	,,	,,
15	*Tom Griffith	2	0	27	3 Dec., 1870	South Essex A. C.
	C. W. V. Clarke ...	2	10	13	26 Dec., 1885	Southampton A. C.
20	*Tom Griffith	2	47	52	3 Dec., 1870	South Essex A C.
	W. E. N. Coston ...	3	0	9	27 Dec., 1880	Southampton A. C.
25	,, ...	3	53	35	,,	,,
30	,, ...	4	46	52	,,	,,
40	*A. W. Sinclair	6	38	3	14 Nov., 1879	North London A. C.
	J. A. McIntosh	7	1	44	2 Oct., 1886	Ealing H.
50	*A. W. Sinclair	8	25	$25\frac{1}{2}$	14 Nov., 1879	North London A C.
	J. A. McIntosh	8	52	25	2 Oct., 1886	Ealing H.
75	*A. W. Sinclair	14	10	0	27 Aug., 1881	North London A. C.
100	* ,, ...	19	41	50	,,	,,

* In matches against time.

† On June 20 Sturgess walked the distance in 13 min. 33 sec., at Wembley Park, but it has not yet been considered by the Committee.

Time Records—Walking.

Event.	Name. Record made by	Distance. M.	yds.	ft.	Date.	Club of which a Member.
2 hours' Run.....	G. Crossland	$20\frac{1}{2}$			22 Sep., 1894	Salford H.
1 hour's Walk	W. J. Sturgess.....	8	270		19 Oct., 1895	Polytechnic H.
3 hours' Walk.....	Tom Griffith.....	21			3 Dec., 1870	South Essex A. C.
12 ,, ...	A. W. Sinclair.....	64	180		27 Aug., 1881	North London A. C.
		H.	M.	S.		
London to Brighton ($52\frac{1}{4}$ miles)	J. A. McIntosh.....	9	25	8	10 April, 1886	Ealing H.

Odd Events.

Event.	Name. Record made by	Distance. ft.	in.	Date.	Club of which a Member.
*High Jump	J. M. Ryan	6	$4\frac{1}{2}$	15 Aug., 1895	Irish A. A. A.
Pole Jump	R. D. Dickenson...	11	9	1891	Windermere.
Long Jump	C. B. Fry	23	$6\frac{1}{2}$	4 Mar., 1893	Oxford U. A. C.
Putting the Shot (16lb.)	D. Horgan	46	$5\frac{1}{2}$	15 Aug., 1894	Banteer.
†Throwing the Hammer (16lb.)	W. J. M. Barry ...	134	7	23 July, 1892	Southport A. C.

* G. W. Rowdon's 6 ft. $5\frac{3}{8}$ in., Aug. 6, 1890, at Hayter Camp, is not authentic.

† J. Flanagan, of Kilmallock, threw 147 feet at Stamford Bridge Grounds, London, May 25th, 1896, but it has not passed the General Committee as yet.

Best Amateur Records in America.

EVENT.	RECORD.	HOLDER.	CLUB.	GAMES.	DATE.
100 Yards	9⅘ sec.	J. Owen, Junr.	Detroit	Championships	Oct. 11, 1890
100 Yards	9⅘ sec.	B. J. Wefers	N. Y. A. C.	N. Y. A. C. v. L. A. C.	Sept 21, 1895
220 Yards	21⅕ sec.	B. J. Wefers	Georgetown, U.	Inter-Collegiate	May 30, 1896
300 Yards	31⅕ sec.	B. J. Wefers	N. Y. A. C.	Travers Island	Sept. 28, 1895
440 Yards	‖47⅘ sec.	W. Baker	Boston A. C.	Boston	July 1, 1886
Half-Mile	1 min. 53⅖ sec.	C. J. Kilpatrick	N. Y. A. C.	N. Y. A. C. v. L. A. C.	Sept. 21, 1895
One Mile	4 min. 15⅘ sec.	T. P. Conneff	N. Y. A. C.	Travers Island	Aug. 30, 1895
Four Miles	20 min. 15⅕ sec.	W. D. Day	S. I. A. C.	Bergen Point, N. J.	Nov. 16, 1889
Five Miles	25 min. 23⅗ sec.	E. C. Carter	N. Y. A. C.	New York	Sept. 17, 1887
Ten Miles	52 min. 38⅘ sec.	W. D. Day	S. I. A. C.	West New Brighton	Oct. 26, 1889
120 Yards Hurdles.	*15⅘ sec.	Stephen Chase	Travers Island	New York	Sept. 28, 1895
One Mile Walk	6 min. 29⅘ sec.	F. P. Murray	W. A. C.	New York A. C.	Oct. 27, 1883
Two Miles Walk	13 min. 48⅘ sec.	F. P. Murray	W. A. C.	Manhattan A. C.	May 30, 1884
Three Miles Walk.	21 min. 9⅕ sec.	F. P. Murray	W. A. C.	New York	Nov. 6, 1883
Four Miles Walk	29 min. 40⅘ sec.	T. H. Armstrong	N. Y. A. C.		Nov. 6, 1877
Seven Miles Walk.	54 min. 7 sec.	E. E. Merrill	Univ. A. C.	Boston A. C.	Oct. 5, 1880
High Jump	6 ft. 5⅛ in.	M. F. Sweeney	N. Y. A. C.	Manhattan Field	Sept. 21, 1895
Broad Jump	23 ft. 6½ in.	C. S. Reber	Detroit	Detroit, Mich.	July 4, 1891
Pole Jump	11 ft. 5⅜ in.	W. S. Rodenbaugh.		Philadelphia, Pa.	Sept. 17, 1892
Throwing Hammer 16-lbs. (7ft. circle).	145 ft. 0¾ in.	J. S. Mitchell	N. Y. A. C.	Travers Island, N.Y.	Oct. 8, 1892
Putting the Weight 16-lbs. (7ft. circle).	47 ft.	G. R. Gray	N. Y. A. C.	Chicago	Sept. 16, 1893
Throwing 56-lbs. (7ft. circle)	35 ft. 10½ in.	J. S. Mitchell	N. Y. A. C.	Travers Island, N.Y.	Sept. 2, 1894

* On cinders; same runner 16 sec., on grass, Sept. 22, 1894. ‖ On a straight course.

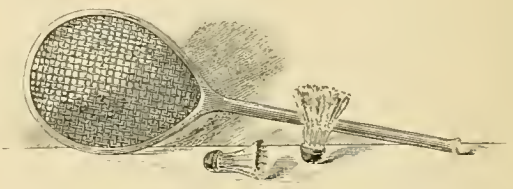
AUROCHS—The true Aurochs (*Bos taurus*, var. *primigenus*) is not now found in a wild state. That which sportsmen call the "Aurochs," is really the European bison (*Bos bonasus*). [*See* BISON AND BUFFALO.]

BABIRUSA (*Sus babirusa*)—A wild hog found in Celebes and some neighbouring islands, and distinguished by the extraordinary size and curvature of the tusks in the lower jaw of the male. It is much hunted by the natives, who drive it into a netted enclosure and afterwards secure it alive or spear it.

BADGER (*Meles taxus*)—An unfamiliar, though by no means rare, British quadruped, of burrowing and nocturnal habits. As **Badger-Baiting** [*see* OBSOLETE SPORTS] has long since been forbidden by statute, the "brock," as it is widely known in the north country, affords now-a-days but little legitimate sport. In some districts, however, mainly owing to its falsely alleged taste for game (its real diet consisting mainly of roots, wild fruits, and insects), it is shot by keepers, and also persecuted in various ways. The favourite methods of capturing it at the present day consist either in digging it out; or, on a moonlight night, when the animal is away from home, blocking every entrance to the burrow but one, and, having placed a sack in the free entrance, driving the badger back to this extemporised trap with dogs.

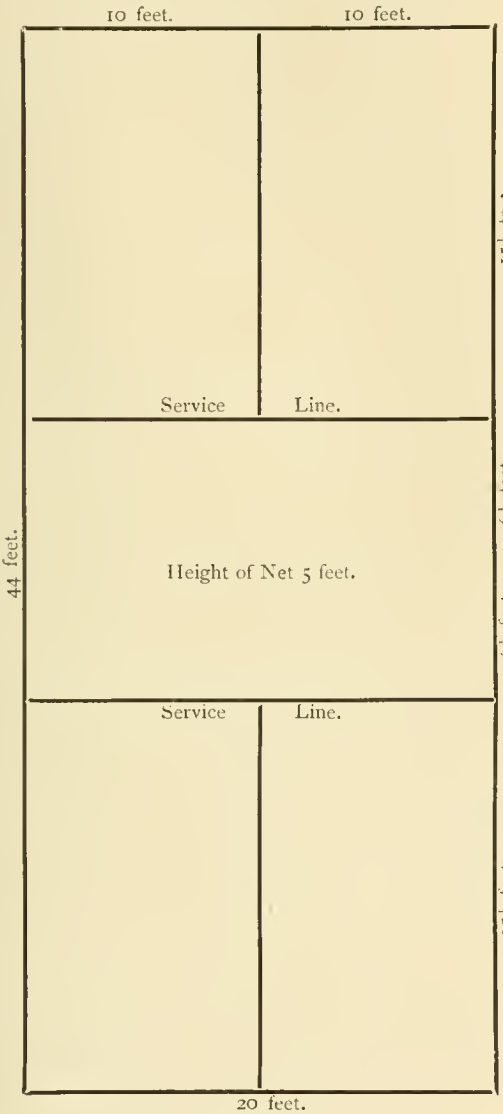
In South Germany, where the hunting of the badger is much more in vogue, the small breed known as Dachshund (*Dachs* = badger) is employed, and two of these animals will keep their tough assailant at bay until their master is able to seize it by the tail and transfer it to a sack.

BADMINTON—The game of **Badminton** is played in a Court forty-four feet long by twenty wide. The **net**, which ought to be as light as possible, and made with a small mesh, should be stretched for twenty feet across the centre of the court, and should not be less than eighteen inches deep. Its lower edge should be five feet from the ground, and as taut as possible.



The Badminton **bat** should not be more than five ounces in weight. The **shuttlecock** should weigh about a quarter of an ounce. The small shuttlecock used by many clubs weighs considerably less than a quarter of an ounce. This small shuttlecock is slower in flight, and the rallies are consequently longer and the game generally easier.

Badminton is best played in a well-lighted room or hall, where the wind cannot affect the flight of the shuttlecock. It can be played very well with the larger shuttlecock in the open air on a calm day. The game is often played with three or four players on a side. This is not, however, the scientific game; for with more than two on a side the players in front can-



Scale ⅛ inch to a foot.

not help getting in the way of their partners behind.

The **Service lines** are drawn across the court parallel with the net, and six and a half feet on each side of it. A line down the centre, joining the service lines and baselines, forms the four courts.

The **game** is fifteen for one or two players on a side, twenty-one for three players, and twenty-eight for four players on a side.

In beginning a game with two players on each side, the side that goes in first is only allowed one hand in, but after the first round the partners go in one after the other.

In **Serving,** the striker must stand behind the service line, and hit the shuttlecock so as to give it an upward trajectory, and send it over the opposite service line into the opposite diagonal court. There are no faults allowed in serving as in lawn-tennis. Only the player in the diagonal court can take the serve. After the serve, the players can go as near the net as they like, and send the shuttlecock anywhere within the courts, provided it goes over the net and between the poles. If the shuttlecock touches the net in going over, it does not invalidate the stroke, but the striker must not touch the net with his bat.

If the striker send the shuttlecock into or under the net, or outside the courts, it scores against him. If his side be in, the hand goes out; if the other side be in, it scores an ace. If the shuttlecock touch the ground within the opposite courts, or touch the dress or person of a player, the striker scores an ace if his side be in; if the other side be in, their hand goes out.

Whenever an ace is scored, the server changes courts. When the score stands thirteen all, they set five; when fourteen all, they set three. They begin counting again, and the side which first scores five or three wins. The sides cross over when the score has reached eight.

Badminton is a quicker game than lawn-tennis. The courts being smaller, there is not so much running about, but there is more hard hitting, and the exercise to the arm is greater.

It is a great advantage to put the server out at the first stroke, to prevent his side scoring. The policy of the server is to send the shuttlecock high, so that it may drop as perpendicularly as possible into the farthest corner of the diagonal court, and thus make it difficult for the adversary to cut it down and kill it. It is generally good play to keep sending the shuttlecock high at the back of the adversary's court until an opportunity comes to cut it down and kill it. In cutting down the striker should try not to send it within reach of the adversary. When the shuttlecock is being driven hard backward and forward, an ace is often secured by suddenly altering the pace and dropping the shuttlecock just over the net.

In playing **singles,** the player who gets command of the shuttlecock, and is thus able to send it at each stroke far from the adversary, has a great advantage. In such a case, unless the last ace in the game is in question, it is *better deliberately to lose the ace* than to continue playing at such a disadvantage. As an

illustration, the writer saw a very good lady-player lose an important match in this way to a skilful adversary. It was towards the close of a severe contest that the lady was forced by her antagonist to run across the courts at every stroke. She ran so well that she must have covered nearly fifty yards before she failed at last to return the shuttlecock. The effort was so great, that she was quite exhausted, and the lady opposed to her made the two or three aces necessary to win the match with the greatest ease.

Badminton is a game of science and strength. The quickest and most active player is almost sure to win, but he must also possess that instinct which enables him in the heat of a rally to decide in a moment where to place the shuttlecock so as to be in the most difficult position for the adversary to reach it.

Badminton, at first played only at Bath, Cheltenham, and other places where retired Indians congregate, is now widely known. Clubs are formed all over the country. The game has stood the test of time, is more popular than ever, and will doubtless continue to flourish.

ARTHUR SOUTHEY.

BADMINTON IN INDIA is ordinarily played in a ground the size of a double lawn-tennis court (78 × 36 ft.), with five players a-side. Instead of the usual shuttlecock, most players prefer a ball of Berlin wool wound on a double disc of cardboard 2¼ inches in diameter, with a central hole of 1 in. The ball flies more quickly than the shuttlecock. When missed by one player, it is not considered dead until it has touched the net or ground, or been taken in hand, but may be returned by any other player, or players, on the same side.

GLOSSARY.

Ace—The unit of scoring.

Base-lines—The lines parallel with the net, which limit the ground at the extremity of the courts.

Court—The ground, a rectangle measuring 44 ft. × 20 ft., is marked out into five divisions. The service-lines are parallel to, and on either side of the net. The spaces between the service-lines and base-lines are subdivided into right and left courts [*v.* diagram].

Fault—An attempted service or return, which either fails to clear the net, or pitches outside the proper court.

Game—This consists of 15 points for 2 players a-side, 21 for 3 a-side, or more.

Hand-in—The player who serves.

Hand-out—The server or striker is out when the shuttlecock does not clear the net, or when it does not reach the proper court or drops beyond the boundary-lines.

Net—This is slung across the shorter transverse of the courts, midway between the base-lines. It should be between 5 ft. and 5 ft. 1 in. in height. It is a light, small-meshed net.

Points—The units of scoring. A point is scored when the opponents fail to return the shuttlecock, or when they send it out of the courts.

Racquet—Must not exceed 5 oz., and is strung with cat-gut.

Service—The opening stroke of a round, the server standing in one court between the service- and base-lines and driving the shuttlecock in a rising trajectory, so that it would pitch, if allowed, in the court *diagonally* opposite him.

Service-lines—Lines drawn across the ground parallel with the net and 6½ ft. on either side of it.

Shuttlecock—The missile employed, which consists of a cork crowned with feathers, from 3 to 5 inches in length. In weight, about ¼ oz.

RULES.

I. Badminton can be played by any number of players, up to four on a side.

II. A full-sized court is 44 feet by 20. The top of the net should be 5 feet from the ground and should be quite straight.

III. Choice of courts is decided by tossing. The side that loses the toss taking the serve; the player in the right hand court beginning the service.

IV. In beginning the game, when there are 2 on a side, only one hand goes in, when 3 are on a side only 2 go in, and when 4 are on a side only 3 go in. After the first service the partners all go in one after the other.

V. The server may serve from any part of his court behind the service line. He must serve over the net and over the service line on the opposite side, into the diagonal court. In serving, the wrist must not be higher than the elbow. No faults are allowed in serving.

VI. Only the player or players standing in the diagonal court can take the service. Where 3 are playing on a side, however, the player at the back can take the service from either court. They may take a wrong service if they choose, but if they fail to return the shuttlecock the server scores an ace.

VII. After the serve both sides may go as near the net as they like, and send the shuttlecock anywhere within the opposite courts, provided it goes over the net and between the poles.

VIII. Should the shuttlecock be served or returned by any player, under the net, or into the net, or through the net, or outside the court it scores against him. If his side is in, the hand goes out, if the other side is in, it scores an ace.

IX. If the shuttlecock touches the ground within the opposite courts, or touches any part of the dress or person of a player in the opposite courts, the striker scores an ace if his side is in, if the other side is in their hand goes out.

X. If a player touches the shuttlecock with his bat, but fails to return it, it scores against him, whether or not it falls outside his courts.

XI. If the striker touches the net with his bat it scores against him, and if he strikes the shuttlecock before it has crossed the net it scores against him.

XII. If the shuttlecock touches the line it is within the courts.

XIII. Whenever an ace is scored the server changes courts; when 2 on a side are playing he changes with his partner; when 3 are playing the player at the back comes to the front to serve; when 4 are playing the server changes courts, with the partner standing level with him in the back or front as the case may be. No change of position among the players is allowed unless an ace is scored by the side wishing to change.

XIV. If the shuttlecock touches the net or the poles in going over the net, it does not invalidate the stroke.

XV. The game is 15 for singles or 2 on a side, for more than 2 on a side the game is 21.

XVI. When the game is called 13 all they set 5, when 14 all they set 3. In each case they begin counting again and the side which makes 5 or 3 first wins. In games of 21 they set 5 at 19 all, and 3 at 20 all.

XVII. In games of 15 points the sides cross over when the score has reached 8, and in games of 21 they cross over when the score has reached 11.

XVIII. The decision of the umpire is final, whether it is right or whether it is wrong.

BANDY—Bandy, or Hockey on the Ice, is a similar game to hockey on the land. It is played by skaters upon broad sheets of ice between goals, with curved sticks called "bandies," and a ball or "cat."

Teams—The players are divided into two parties or teams, and the object of each set of players is to drive the ball through the goal of their opponents.

Ground—A large piece of ice is needed for playing the game satisfactorily. The smallest ground allowed by the rules is 100 yards × 50 yards, and that only when a larger cannot be obtained. The ground should be *quite free from snow*, as even a thin layer spoils the game, and the snow should be swept off at once before it has time to harden.

Goals—The goals consist of two upright posts, 12 feet apart.

Number of Players—The players are eleven a side, but if the field is smaller than 100 yards × 50 yards it is better to reduce their number; thus, six a side make a good game on a field of 75 yards × 35 yards.

The Bandy—The bandy used is a curved ash stick of about 1½ inches diameter and 3½ feet long. It is very similar to the stick used in hockey on land, except that the blade is not so curved, and is not, as in that game, rounded on one side, but has both sides flat.

The Cat—The "cat" used is an india-rubber ball, about the size of a lawn-tennis ball. With such tools on a surface like ice tremendous hits might be given. To discourage this, and also to prevent accidents, the bandy in hitting *may not be raised above the shoulder.*

The Game—The rules of the game are in general the same as those of hockey on land, the rules of offside being the same as in Association football, with the exception that a player cannot be offside in his own half of the ground. There is, however, no rule that all hits must be made on one side of the bandy, or from the right hand; and, in fact, in dribbling the player keeps the ball well in front of him, pushing it forward, now with one side of the bandy now with the other, and often changing hands when dodging an opponent. The teams are ranged in the field much the same as in hockey and football, there being a goalkeeper, backs, half-backs, and forwards; and a combined game of passing across the ground is found effective, especially upon smaller grounds. On larger grounds the dribbling is a special feature of the game, and is far more brilliant and effective than in the games above mentioned. The skilful player can run with the ball in front of him at very nearly his full speed, perhaps at the rate of from twelve to fourteen miles an hour, or even more, and can, almost without slackening his pace, dodge and elude a single player coming forward to "tackle" him; while it is almost impossible for the player when passed to turn round and catch him up again. The way in which a fast and skilful player will sometimes thread his course with the ball through his opponents is astonishing. These facts, and the rapidity with which the ball travels when hit, make the game exceedingly rapid and exciting, and of keenest interest to players and onlookers; and it would doubtless become very popular but for the very limited number of days in the year upon which it can be played, the difficulty of finding a suitable ground, and the necessary uncertainty which attends every fixture, even when made only two or three days ahead, from the changes in the weather.

The game has been described as played in accordance with the rules of the *National Bandy Association* which are given below. But where the field of ice is very small a plain cork bung, covered with leather or bound with string, may be used with advantage; and in some places the thin hockey-stick with bent end of about six inches, formerly used by the Virginia Water and other clubs, is still preferred. On the artificial ice at the Ice Palace (Regent Street), where the space is of course extremely limited, a fairly good game is obtained by using a flat india-rubber disc (3 inches diam. × 1 inch thick) as the cat, and by prohibiting the bandy when used in hitting from being raised from the ice.

The kinds of skates used in the game are various. The members of the *Bury Fen Club* use ordinary "fen runners" (wooden with flat blades), and by preference the "Standard" skates (marked "S. B." with crossed bandies), but the Virginia Water players, and many others outside the fens, use one or other of the varieties of figure-skates with curved blades.

The game, played with the restrictions imposed by the rules against high hitting, tripping, charging, &c., is both safe and delightful; and the writer, after considerable experience, hardly remembers a serious accident occurring. But if played in rude and unrestricted fashion, and in an ill-natured spirit, it becomes dangerous. A great advantage is that it is played with enjoyment and success by men of middle age, and also by ladies, among themselves. The game has for some years been played by ladies on private pieces of water, and by, among others, the Princess of Wales and her daughters. Ladies should, however, use thinner bandies and a lighter ball than those above mentioned. A lawn-tennis or a string ball is suitable.

Among the principal bandy clubs are the *Bury Fen* B.C. who play on Bury Fen, at Earith (Hunts.); the *Virginia Water* B.C. who play on Englemere, near Ascot; the *Winchester* B.C., on Winnall meadows near that city; the *Camberley* club, on the "Staff" lake, and the *Northampton* B.C. Mr. Bryant's lake at Stoke Pogis, and the Duke of Marlborough's lake at Blenheim are also fine bandy grounds. The game was

introduced in 1890–91 into Holland, and there are clubs at Haarlem, Amsterdam, and other places. In 1894 Mr. C. G. Tebbutt introduced it into Norway. It is also regularly played in the season at Davos Platz, and at St. Moritz in Switzerland by the English visitors. Further information may be obtained from Mr. H. Blackett, Sunninghall, Ascot, hon. sec. of the Bandy Association. ARNOLD TEBBUTT.

GLOSSARY.

Ball—Of solid indiarubber, diameter between 2¼ and 2¾ in. Usually red.

Bandy—The club from which the game is named. Shaped like a hockey-stick, only with the blade flat on both sides. Length along the outer curve, not more than 4 ft. Width, not exceeding 2 in. at any point.

Corner-hit—A free-hit, given to one side from the corner next their opponents' goal.

Dribbling—Pushing the ball along with the flat of the bandy, as opposed to hitting.

Goal—(1) Two posts 12 ft. apart, connected by a tape or lath 7 ft. above the surface of the ice. (2) The scoring unit, obtained by driving the ball through the posts.

Ground—A rectangular sheet of ice, measuring not more than 200 yds. × 100 yds. and not less than 100 × 50.

Offside—Same as in Association Football (*q.v.*); only a player cannot be offside in his own half of the ground.

Team—Eleven players on each side.

Time—Usually one hour and a half for each match.

RULES OF PLAY.

1. A bandy team shall consist of eleven players.

2 The ground shall be a right-angled parallelogram, 200 yards long by 100 wide; but when it is not possible to provide so large a ground it may be reduced, and also the number of players, by mutual agreement, provided that the ground be not less than 100 yards by 50 yards. The longer sides to be called *side lines* and the shorter lines *goal lines*. A line, or mark, parallel to, and equidistant from, the goal lines shall be called the *centre line*. (The usual and best size for play is 150 yards by 100 yards.)

3. The bandy shall be of wood, not exceeding two inches in width in any part, or four feet in length as measured along the handle and round the curve; and shall have no metal fittings or sharp edges.

4. Players must wear the colours of their side on the playing arm or bandy.

5. The ball shall be of solid indiarubber, not less than 2¼ inches, nor more than 2¾ inches in diameter. It is desirable to have it coloured red. The present regulation lacrosse ball is much used.

6. The goals shall be in the centre of the goal lines, and consist of two uprights or goal posts twelve feet apart, connected by a horizontal tape or lath seven feet from the ice.

7. The choice of goals shall be tossed for at the beginning of the game; and at half-time, and then only, the teams shall change ends. The time during which a match is to last shall be agreed upon beforehand by the captains, the recognised time for play being one and a half hours.

8. To start the game, and after each goal is made, each team being on its own side of the centre line, play shall be commenced by the referee or one of the umpires throwing up the ball perpendicularly in the air from the centre of the ground, and when the ball has reached the ice it shall be in play.

9. A goal is scored when the ball has passed between the goal-posts and under the tape or lath.

10. When a player touches the ball, any player of the same side who at that moment is nearer his opponents' goal-line is offside, and may not touch the ball himself, nor in any way whatever prevent any other player from doing so, until it has been touched by another player; unless there are at least three of his opponents nearer their own goal-line. No player can be offside when within his own half of the ground.

11. Whilst the ball is in play, and when a player strikes at the ball, his bandy may not during any part of the stroke rise above his shoulder.

12. The ball may be stopped with any part of the body or bandy, but not with the hand on the ice, except in the case of the goal-keeper; nor must it be picked up, carried, kicked, thrown or knocked on, except with the bandy. No charging, kicking, collaring, shinning, tripping, throwing the bandy, or rough play shall be allowed. Fencing or hooking bandies shall not be allowed.

13. On the occasion of a free hit, no member of the offending team shall be within five yards of the spot where such hit is made, but he shall not be compelled to go behind his own goal-line. A goal cannot be scored from a free hit, unless the ball just touches another player.

14. On the occasion of a free hit, a corner hit, or when the ball is hit off from a goal-line, or from a side-line, the striker or thrower shall not touch the ball again until it has been touched by another player.

15. When the ball has passed the side-line, it shall be immediately struck or hit in from where it crossed the line, in any direction, except forward, by one of the opposite team to that of the player who last touched it. No other player shall be within five yards of the side-line.

16. If the ball is passed beyond the defenders' goal-line, but not through the goal by the attacking team, it shall be hit out into play by one of the defenders, from any point on the goal-line within ten yards of the nearest goal-post, and on that side crossed by the ball, the attacking side being at least twenty-five yards from the said goal-line. But if the ball has been last touched by one of the defending team before crossing the goal-line, a player of the attacking team shall have a free hit from any point on the side-line within a yard of the nearest corner; and at the moment of such hit, all the defenders must be behind their own goal-line.

17. The penalty for any breach of these rules shall be a free hit by one of the opposite team, from the spot where the rule is broken.

18. Two umpires and a referee should be appointed, each captain appointing one umpire, and the umpires so appointed choosing the referee. When there are only two umpires and no referee, each umpire shall act in one half of the ground as divided by the centre-line, and give decisions only in that half. The two umpires shall not cross over at half-time. In case of umpires disputing, the decision of the referee shall be final. In case there is only one umpire, his decision shall be final. Should there be no umpire, or umpires, the captains shall be arbitrators in all disputes.

19. A match is won by the team which scores the greater number of goals.

20. In the event of an appeal for any supposed infringement of the rules, the ball shall be in play until a decision has been given.

21. The referee shall have power to stop the game for such time as he may think fit, whenever he may deem it necessary to do so; and he shall deduct any time which he considers has been wasted, owing either to an accident or other cause.

22. In the event of any temporary suspension of the play from any cause, the ball not having gone beyond the side-line, or behind the goal-line, the game shall be restarted by the referee throwing up the ball at the spot where the play was suspended; and when the ball has reached the ice, it shall be in play.

[NOTE.—"Touching" in these rules means touching the person or bandy.]

BARBEL (*Barbus vulgaris*)—[*See* ANGLING, (COARSE FISH)].

MEASUREMENTS, ETC.—Length of head 4 to 4¾, of caudal fin 4¾, height of body 5 to 6 times in the total length. *Eyes*—rather high up, situated in the middle of the length of the head, 8 to 10 diameters in the length of the head, 3½ to 4½ diameters from the end of the snout, and 3 to 4 apart. Dorsal profile more convex than that of the abdomen, which is almost horizontal. Snout produced and somewhat overhanging the jaws, the maxilla much longer than the mandible. Lips thick. *Barbels*—two thick pairs, the maxillary ones extending to beneath the middle of the eye, while the rostral pair are somewhat shorter. *Teeth—pharyngeal*, curved, hooked at their extremity and pointed, 4, 3, 2/2, 3, 4. *Fins*—dorsal commences about midway between the angle of the mouth and the base of the caudal fin, the extent of its base ¼ shorter than the third undivided dorsal ray, which is the longest, osseous, strong, and serrated along its posterior margin: last ray of the fin half the height of the longest anteriorly. Pectoral inserted low down, broad, and about four-fifths as long as the head, but not reaching the ventrals, which latter do not extend to the anal. Anal narrow, the length of its base being only two-fifths of its height. Caudal deeply forked. *Scales*—about thirty-five rows anterior to the base of the dorsal fin, and seven between the lateral-line and the base of the ventral. *Lateral-line*—complete, continued to the base of the caudal fin. *Gill-rakers*—short. *Colours*—olivaceous, shot with gold, lightest along the sides and lower surface. Dorsal fin with a narrow, dark outer edge. The other fins of a reddish colour.

Day, *Fishes of Great Britain and Ireland* (Horace Cox), vol. ii. 169.

BARRACOUTA (*Thyrsites*)—A name locally applied to more than one family of sea-fish. The finest species, both for sport and food, is found in the waters round Tasmania, where it is caught from a boat up to a weight of 10 lbs. with what is called the "Maori-jig," a simple tackle consisting only of a piece of red wood pierced by a tent nail. The boat is kept in motion and the fish, which seize the bait greedily, are jerked on board by means of a short, stout rod and line.

BASEBALL—Many writers, when chronicling the merits of their own particular sport, seem to consider they cannot do it justice unless they prove by arguments, more or less convincing, that it dates from almost prehistoric times. Baseball, I may say at once, does not belong to Ancient History. What matters it whether the game originated in the days of Alfred the Great or simply dates its birth somewhere in the last half century? If the skill and science of the pastime appeal to the athlete, what does it matter for its antiquity? I may frankly admit then that Baseball, as Baseball, is not yet half a century old.

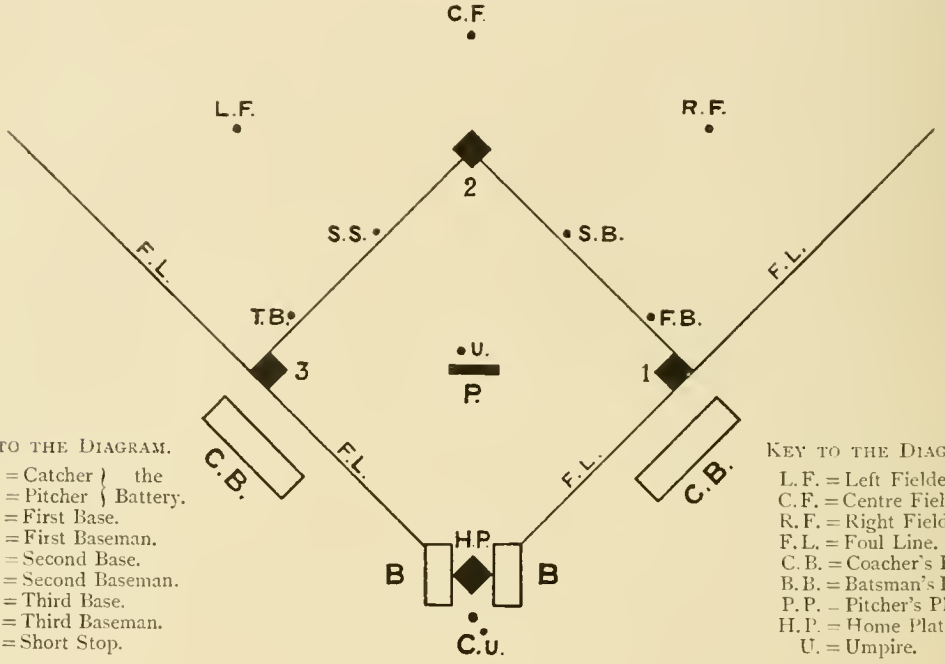
Similarity to Rounders—An Englishman, witnessing the game for the first time will immediately exclaim, "Why, this is nothing but Rounders!" To a great extent the Englishman is right. Baseball is Rounders made scientific. Using Rounders for their groundwork, our brothers on the other side of the Atlantic started to build the edifice of America's national game. Rules and regulations were made to govern the game. Each year saw something added, something amended. The rough edges were hewn off, the rough surface in time was polished. Useless rules were abolished and useful ones evolved. The result has been that Baseball can now take its stand amidst the finest forms of athletics and its followers can boast of as much skill and science in their pursuit of the game as do the devotees of Football or Cricket in the better known winter and summer sports at home.

The Theory of the Game—Eighteen players are required for a Baseball match, nine on each side. The aim of each team is the same as in Cricket—viz., to make as many runs as possible. To score a run a player must make a complete circuit of the bases, but not necessarily on one hit. For instance, with his own hit he may only get as far as first base. He may get to second base whilst the pitcher (the equivalent of the bowler in Cricket) is delivering a ball to the succeeding batsman. Third base may be reached on the hit of the batsman; and he may reach home plate on a hit by batsman number three. So he would score a run. There are other methods, of course, of getting from base to base, but the above will suffice for an example.

The captain of the home team has choice of innings. To the cricketer such a proceeding would seem to give the visiting team the worst of the bargain. Did the game take as long to decide as Cricket, the argument might hold good: but, as a baseball match as a rule does not last more than two hours and a half at the most, it would be hard to say that either side is unduly favoured. One team takes the field, and the members of the other take their turn at the bat in regular order. When three men are put out the innings is finished, and the other team then takes its turn with the bat. The game consists of nine innings for each side, and the team having the greatest number of runs at the finish wins.

To Lay out the Baseball Field—The simplest method of marking out a Baseball field is as follows:—Procure a heavy cord one hundred and eighty feet in length. In it tie three knots, one at sixty feet five inches, another at ninety feet, and a third at one hundred and twenty-seven feet four inches. When you have found the most suitable position for the home-base, more commonly called the home-plate, drive a peg in the ground and attach the line to it. Carry the line straight out in the direction in which you intend to bat, and knot number three will give you the position of second base. Great care must be taken that the cord be quite taut and absolutely straight from the peg at the home-plate to the centre of the second base. Whilst the cord is so held, the knot at sixty feet five inches will mark the centre of the pitcher's plate. Let one end of the cord be held at the home-plate, the other at second base, and let some one holding the knot at ninety feet, which of course is the exact centre of the cord, walk

out with it to the corner of the diamond where first base is to be situated, and when the line cannot be carried further without bringing it away from the home-plate or second base, there fix your first base. Repeat this in the opposite direction and mark third base, and there you have your diamond complete. Herewith is appended a diagram of a Baseball field showing the positions of the fielders, the foul lines, bases, &c.



KEY TO THE DIAGRAM.
C. = Catcher } the
P. = Pitcher } Battery.
1. = First Base.
F.B. = First Baseman.
2. = Second Base.
S.B. = Second Baseman.
3. = Third Base.
T.B. = Third Baseman.
S.S. = Short Stop.

KEY TO THE DIAGRAM
L.F. = Left Fielder.
C.F. = Centre Fielder.
R.F. = Right Fielder.
F.L. = Foul Line.
C.B. = Coacher's Box.
B.B. = Batsman's Box.
P.P. = Pitcher's Plate.
H.P. = Home Plate.
U. = Umpire.

PLAN OF GROUND.

Duties and Qualifications of Players —The Pitcher—The pitcher is in Baseball what the bowler is in Cricket, and consequently his first qualification must be a thorough command of the ball. It is true that speed counts for a good deal in both games, but speed is practically useless if eight out of ten balls are sent to the batsmen in such a fashion that they can never be effective. The pitcher is not allowed a run, as is the bowler, preparatory to delivering the ball; but apart from that, his deliveries are practically untrammelled. He may pitch, throw, jerk or hurl the ball provided he does it in such a way that the ball pass over the home-plate not higher than the batsman's shoulder nor lower than his knee. His aim is to deliver three balls answering the above description in such a way that the batsman cannot hit them, and provided he succeeds before he sends up four balls that are not of this nature, he retires the batsman. Should the batsman, however, strike at a ball not coming over the plate and miss it, the pitcher has attained his end just the same. A thorough command of the ball, then, is necessary. When he has got this, he must bear in mind the important fact that the true art of pitching is to deceive the eye of the batsman. That is to say he must send the ball towards the bat in such a way as to lead the striker to believe that it is coming high when it is really coming low, that it is travelling direct for his chest when it is really going feet away from his body, that it is a fast delivery when in reality it is slow, and so on. Like the bowler in Cricket, if he wants to excel in the game he must use his intellect. Brute strength and fast pitching are all very well in their way, but unless allied to sound judgment, to all intents and purposes they are of very little avail. To keep his judgment, he must keep his temper. He must not, simply because his best deliveries are treated with contempt, lose control of himself. When he loses control of himself, he loses control of the ball; and when that happens, he had better vacate his position, or else he will soon lose his side the match.

The pitcher must, above all things, have a code of signals with his catcher. A movement of the hand, an elevation of the head by the latter, lets the pitcher know that this ball is to be an in-shoot, the other an out-curve. A movement of the head may mean that the pitcher is to throw to second base; a nod may mean that the ball is to be hurled to first base, and so on. They must agree upon their signals, and the services that the catcher will render the pitcher, who cannot watch the field as does the man behind the bat, will be invaluable.

It was doubted for some time in England that the Baseball pitcher could curve or twist a ball in the air. That the average pitcher does so there cannot be a doubt. It seems

THE PITCHER.

wonderful that any one can do so without assistance from the ground, but a lesson or two from a good pitcher will give a likely man the knowledge of how it is done, and then constant, steady practice will do the rest. The beginner must be content with ordinary straight balls at first. The science of pitching will be picked up in time. One thing I would impress upon the pitcher, and it is this, study the batsman. If you find that he is timorous of the deliveries that come near his body, you must attack his weak point. If you discover that he cannot hit a low ball, do not be anxious to treat him to high ones. Study the weak points of your adversary. Find where his defence is weakest, and, when you have found the weak spot, turn your attention to scoring off it.

The pitcher, too, must be a man of pluck. In his position the ball will be batted very often to him at lightning speed. He must not be afraid to face it. If he is nervous and timorous he is scarcely likely to pitch with judgment, for he will be so impressed with the idea of avoiding being hit that he will think of little else.

The Catcher—The catcher's position, to my mind, is the most difficult and most dangerous in the game. When there are not any men on bases the position is an easy one, but when "two strikes" or "three balls" are called, then the troubles commence. He must come right up behind the bat and face the fastest deliveries without flinching. It is a position demanding courage. In addition to courage the catcher must have splendid judgment and a sure eye. His duties are akin to those of the wicket-keeper in Cricket, but considerably more varied. He must be able to hold every third strike missed by a batsman, or, if he drop the ball, he must be alert enough to pick it up in time to hurl it to first base so that it will arrive in the baseman's hands before the runner can get to the base. He is bound to keep a most watchful eye on the base runners so as to cut them off when they endeavour to steal a base. To do this he must be a good fast thrower, and must throw with the greatest judgment, for a ball sent flying wildly over the baseman's head might be the cause of a run or two runs being credited to the opposing side.

The catcher must have a ready eye for the weak points of a batsman. He is in a better position to detect them than even the pitcher, and when he has discovered them he must bring the code of signals, of which I wrote above, into play to let the pitcher know exactly what kind of a ball to send in.

Some catchers make the mistake of throwing to a base whenever the base-runner makes a feint at stealing a base. Here the catcher's judgment must again be brought into play. He must know by intuition when the base-runner is feigning, or "bluffing" as they say in America, and when he is seriously intending to steal a base. He must, before he throws, first be sure of his baseman; secondly, be sure of his aim; and, thirdly, be sure that he times his throw well.

First Baseman—The position of first baseman is the one for the tall man, for he has to stop all kinds of throws, straight or wild. All basemen should be able to catch well, but the occupant of first base should especially excel in

THE CATCHER.

this line. More men are disposed of at first base than at any other position on the field. The ball is returned there from every part of the diamond, as the fielders all endeavour to cut off the base-runner at first base. As a result, balls are hurled in every conceivable way at the poor baseman. They come in every possible direction, and he is expected to stop them all. He

is expected to catch the high, the low, the wide, and, if it is absolutely impossible for him to catch them, his fellow players consider that he is bound, at any rate, to stop them. No matter how fast a ball is thrown at him he must get in front of it, for if it passes him there is no telling the harm it may do the side.

Not only must he catch well, but he must be an expert thrower. He must throw straight and with speed. He must, too, have quick judgment to know in an instant when his own base is safe and where the ball is to be sent to do the greatest damage to the opposing side.

Second Baseman—The second baseman, being the centre man in the field, is called upon to do his work quickly and reliably. He must be a most active fielder, for being in a direct line with the batsman he receives some of his hottest drives, and must stop them unfailingly. Moreover, he is a target for the catcher, who throws more often to second base to cut off a runner than to any other position in the field. He must be at his base to accept the hottest throws, and prompt to touch at once the base-runner with the ball before that worthy can attain his haven of rest. Catching the ball and stopping it do not cover the duties of second baseman. He must be able to take in the situation at a glance, and be able to throw surely and effectively the very moment the ball is in his hands. A cool head is needed for the position, with judgment and readiness enough to render him equal to any and every emergency.

Short Stop—Short stop is a very difficult position. As regards fielding, I consider it the most important of any of the positions in the in-field. It is one which calls for a very active player to discharge its duties thoroughly. A very great number of batted balls come to this position, and more often than not they travel at a speed that would disconcert a player who was in any way faint-hearted. He must be a sure fielder and an unerring thrower, for very, very often in the game devolves upon him the duty of securing the treacherous grounder and sending it over to first base in time to cut off the swiftest runner. He is also called upon to back up all the positions of the in-field. He must be behind second baseman when the catcher throws to cut off a runner; the same applies to him with regard to third baseman. He must be on the alert to pick up any ball that glances, when hard hit, off the pitcher's person or clothing. No player consequently is fitted for the position who is not quick and lively in his movements. Great judgment, too, is required in fulfilling the duties of the position. Above all things, he must not be liable to lose his head. He can do more harm by a wild throw to first base than any other fielder, for the simple reason that if he sends the ball out of the reach of first baseman he is sending it right away out of the field of play.

Third Baseman—The position of third baseman involves duties quite as onerous as those of first and second baseman or short stop. In nearly every respect he resembles them. In catching, throwing, fielding, and in the exercise of good judgment he must excel. He must be more on the alert, if anything, than the other in-fielders, for the catcher and pitcher cannot give him warning of their intention to throw to him to catch a base-runner who has ventured too far from his base. Consequently he must be always on the *qui vive*. His fielding must be particularly good, as on it will frequently depend the increasing of the enemy's score. The third baseman with short stop and first and second basemen constitute what is known as the in-field. They must all be in complete accord, and each must know the peculiarities of the others' play. They must work in harmony, and with true dependence on one another. By means of this thorough concord and knowledge of each other's ways many brilliant plays may be brought off. In playing third base the aspirant to Baseball honours must be careful in his throwing. Let him before throwing collect his wits, and when he does throw, let the ball travel low rather than high, for a low ball can be stopped if not caught, whereas a ball overhead is calculated to give the opposing team a base or two. Let the third baseman be energetic and active. Indifferent players seldom trouble themselves to field a ball that does not actually come within their province, but a good player does not wait to consider whether the ball is in his district or not. He goes after it and, if it is fielded by another in-fielder, he has the satisfaction of knowing that he is on the spot to rectify any error his brother player may make.

The Out-fielders—Left, right and centre field constitute the out-field, and the occupants of these positions should be equal in their qualifications. Each should be able to throw well. A good long throw is anywhere in the neighbourhood of eighty-five or ninety yards. The out-fielders should not occupy one position all the time. They must use their discretion and judgment. It would be silly to be as far out for the poor hitter as for the heavy slogger. They must study, too, the peculiarities of the batsman. One may have a habit of hitting always in the direction of left field. Another may have a penchant for driving the ball to the other side of the field. A third may have a knack of batting the ball close to the foul lines. A fourth may bat the pitcher's deliveries just over second baseman's head. All these details must be attended to. The out-fielders, too, must be good judges of fly-balls. The ground balls are generally attended to by the in-fielders. In judging fly-balls it is always safer to get well out for a long hit, as it is easier to run in to catch the ball than to run out with it

and stand a great chance of missing it. When the out-fielders get a ball, they should not hold it an instant. Throw it at once into the in-field, for a man can never be put out whilst the ball is sojourning in the out-field. Let the novice remember this. No doubt he will feel perplexed at times as to where he should throw. Don't wait. Throw it somewhere into the in-field.

Left Fielder—The player occupying this position will find that the majority of the out-field hits are made to his part. Consequently he must not be lazy. Because he has not had a ball for some time he must not on that account go to sleep. A very great number of batsmen are dismissed by being caught by the left fielder. He must then be a good catcher, and he should also be a good runner. Speed is a great help in left field, for the simple reason that often he has to travel from right out in the distance, to take a catch batted well over third baseman's head. He must be ready, too, to back up third baseman and short stop, for if the ball passes them, he must be behind them to avert serious consequences. Good judgment is necessary to calculate, immediately the ball leaves the bat, where it is likely to travel, and at what speed it is going. If his judgment tells him that the ball will not reach him on the fly, he must not wait for it to roll to him. No, he must run to meet it ; and this remark applies to the other out-fielders.

Centre Fielder—This player should act in support of the second baseman. If he gives him good backing up there is no saying what an amount of good he can do for his side. He gives the catcher confidence to throw to cut off a runner, since he knows that even if the ball elude second baseman the centre fielder will be behind him to save serious results. If he plays his position well, he deters the base-runner from trying to steal from first to second base. Good eye and quick judgment are as necessary for him as for left fielder, and like all men in responsible positions—and every position in Baseball is responsible—he must reason for himself. In conjunction with second baseman, if he but use his intellect, he can bring off some very tricky plays.

Right Fielder—The hints given to left and centre fielders apply equally to this position. Sure eye and sure hands for catches, an intellect quick to discern the best possible thing to be done in all circumstances, and a wakefulness to his responsibility of securing the balls that manage to get by the first baseman into the out-field are requisite. So I finish with the fielders. Let us now briefly give a little consideration to the batsman.

The Batsman—To become a good batsman, it is in Baseball as in Cricket. The player must have confidence, nerve, and decision. Of course a good eye is a *sine quâ non*. The batsman, to be a batsman, must keep in constant practice. When at the bat he must study points. He is not the good batsman who, putting every bit of brute strength into his hits, plays purely for applause from the spectators. Such a batsman is no use to his side. Every time he drives the ball away out into the distance, he is giving away a chance for his side, for there are fielders waiting to catch the ball as it descends. The batsman who is of use to his side is the one who strives to place the ball. If he sees an opening between first and second base, he will endeavour to hit the ball in that direction. Or he will strive to drop one just over second baseman's head. At times he will sacrifice his own chance so that some one else on the side may obtain a run or even advance a base. Batting in Baseball is different from batting in Cricket. To begin with, in England's national

The Batsman.

game a bat is used ; in America's national pastime a club, by no means so broad as the cricket bat, is brought into requisition. In Cricket the ball is bowled and usually touches the ground before reaching the batsman. In Baseball the ball is pitched like a full toss. However, cricketers as a rule will find that they will soon pick up the knack of using the club to advantage.

Immediately the batsman hits a fair ball, he endeavours to get to first base. If he gets there without being caught, or before the ball can be sent to first baseman in time to retire him, he at once begins scheming how he is to reach second base in safety. He may get there on a safe hit made by the succeeding batsman or he may steal second ; that is, that either when the pitcher is off his guard or when he is actually delivering the ball, he makes a dash for second base and arrives there before he can be put out. When he succeeds in making the tour of the bases the run is scored.

If you consult the diagram you will find I have treated of all the figures except the F. L. (Foul Line) and C. B. (Coacher's Box). I shall now proceed to describe them.

The Foul Line—Cricketers who have never seen the game played wonder how so few runs are scored when we have but nine fielders. The reason is very simple. The beautiful cuts through the slips and hits to leg are absolutely useless in Baseball. Every ball, to be of any use, must be hit inside the foul line. When it is hit outside the line it counts for nothing, unless one of the opposing team catch it, and then the batsman is out, provided the man who catches it is not within ten feet of the home-plate. Should however the opposing catcher catch the ball within ten feet of the home-plate a strike is recorded against the batsman.

The Coacher—In the diagram C. B. means the Coacher's Box. A coacher in Baseball is a member of the side at the bat, and it is his object to assist and direct the base-runner. When the runner has not to be worrying himself as to where the ball has travelled to, he can concentrate all his thoughts on whatever his coach bids him do. The base-runner must put implicit trust in him. He has not to think for himself. He has not to decide when to steal a base, and when to slide. His mentor's word is law. Immediately the coacher says, "Go!" the runner must not for the fraction of a second stop to consider. His business is to obey. He will be the more ready to do this if he recollects that it is highly improbable that the coacher, being one of his own side, would counsel any act which would be detrimental to their common interest. Implicit trust must be placed in the coacher.

It must not be imagined, however, that anybody can coach. Such is far from the case. The coacher, like the poet, is born, not made. One might think that the players of most experience would be the best advisers of the base-runner. That is a fallacy. It is the man of quick wit and judgment, the one who evinces a thorough grasp of the points of play, the one who is gifted with the faculty of quick yet sound reasoning that is best adapted for the post. He must, moreover, be gifted with a ready wit, for by a humorous remark or a quaint saying he will often distract the attention of the fielder, and that is precisely what he wants, as he can score off the enemy's unpreparedness.

In coaching, rude and offensive language must be strictly tabooed, and all remarks must be addressed to the base-runner. While doing this, the coacher is often able, if he have tact, to address other people through the man whom he counsels. A humorous coacher, whilst his humour serves its purpose in increasing the chances of his side, is highly diverting to the spectators, and adds life and zest to the game. Abuse of the privilege would soon render the coacher's office a nuisance, but the proper use of it adds a feature to the game, which is entertaining to all, and of the utmost service to a team.

I must not forget to mention the necessity of the base-runner and coachers thoroughly understanding how to receive a command and how to interpret it. There must be a code of voice inflections on the part of the coacher, letting the runner know when he is to obey and when he is to pay no attention to what is merely "bluff." The coacher may shout "Go!" over and over again, but the runner will pay no attention to the injunction, for he knows it is only used to fool the fielders, since the proper intonation or inflection of the voice was not used. When, however, "Go!" is shouted in the stipulated tone, he must not hesitate the fraction of a second in obeying the word of command.

The Umpire—As in Cricket, so in Baseball, the position of umpire is most responsible, and at the same time somewhat thankless. The umpire is the man who must be obeyed. His every word is law, and no player may question his decision. True, the captain of a team, and the captain only, may suggest that he has erred in the interpretation of a rule, but he must do so in a thoroughly respectful fashion. The umpire, to fill the position with honour, must be experienced in the rules of the game, quick to read character, that he may know the man who is "bluffing," and the one who appeals for a decision on honest conviction. He must, moreover, be quick in his decisions and prepared to stand by them when once made. The duties of the umpire are very clearly laid down in the rules, and so I shall not enlarge upon them. This I will say,—when an umpire is to be chosen, let him be such a one as possesses the confidence of the players, and is possessed of an equable temper and disposition. In fact the qualifications that go to constitute a good umpire in Cricket or Football, are requisite for the one who would excel in the same line in Baseball.

Concluding Remarks—It can scarcely be said that in the present article I have given a thorough exposition of Baseball. This short treatise must serve but as a foundation upon which the reader, by help of the rules, by witnessing Baseball games, and by questioning the players on the points of which he is doubtful, may build the edifice of his own Baseball reputation.

There are many inducements to lead the average Englishman to embrace the American sport. The game is admirably adapted to the requirements of the average professional man or artisan, as it does not call for a great sacrifice of time, inasmuch as the game does not last longer than two hours and a half. But what an amount of exercise is crowded into that short space of time! Every one is busy. Every one is on the move. There is no room for the lazy

man. Everybody is given a chance to excel both at the bat and in the field. In Cricket, should you get out first ball, your chance is gone, in all probability, of distinguishing yourself at the bat for that day. It is not so in Baseball. As nine innings are played you have five or six chances more of retrieving your honour. From the sportsman's point of view, Baseball should stand ahead of most manly games. It is open to everybody to learn it and become speedily efficient. Application and diligence are the only requirements. With them the average athlete will, after a game or two, learn every detail; and when he has taken to Baseball I can safely say that he will not be in a hurry to desert it. R. G. KNOWLES.

GLOSSARY.

Assist—Any fielder co-operating with another or others in retiring a base-runner is credited with an assist.

Balk—When a pitcher, with a view to deceiving the batsman, makes a motion as if to pitch the ball to him, and fails to do so, the umpire must declare a balk.

Ball—A pitched ball, not passing over the home-plate at an altitude not higher than the batman's shoulder nor lower than his knee, must be declared a ball, provided the batsman does not strike at it.

Base Hit—Any ball so hit that, provided an error has not been made, it cannot be fielded in time to prevent the batsman from reaching his base.

Base on Balls—Is a base accorded the batsman when the pitcher has delivered four balls.

Batsman's Box—The space on either side of the home-plate in which the batsman must stand.

Battery—The pitcher and catcher.

Block Ball—A ball in play touched by a spectator or by one of the batting side when not actively engaged in the game.

Bunt Hit—A ball deliberately batted so slowly to the in-field that it cannot be fielded in time to put out the base-runner.

Coacher's Box—The space in foul territory near first and third base devoted to the coacher.

Dead Ball—A ball delivered by the pitcher which, when it has not been struck at, touches any part of the batsman's person or clothing, or any part of the umpire's person or clothing, while on foul ground, without first passing the catcher.

Diamond—The ground is so called on account of its shape.

Double Play—A play in which the ball is handled quickly enough to retire two men.

Earned Run—When the round of the bases is made without the help of a fielder's error, before the side can be retired, the run is "earned."

Error—Is the mistake of a fielder which helps the opposing side.

Fair Ball—A ball passing over the home-plate not higher than the batsman's shoulder, nor lower than his knee.

Fair Hit—A ball batted within the foul lines and remaining in that territory till it has passed first and third bases, or a ball batted outside the foul lines which rolls inside before passing first or third base.

Fly Ball—A ball batted into the air.

Forced Out—When a base-runner is compelled to make room for his successor and is touched by the ball held by a fielder or cannot reach the next base as soon as the fielder holding the ball.

Foul Ball—A ball batted into foul ground, except in the case of a foul tip.

Foul Lines—The lines running from the home-plate through first and third bases to the extremity of the field.

Foul Strike—A ball batted by the batsman out of position or a ball bunted which rolls into foul ground.

Foul Tip—A foul hit not rising above the batsman's head and caught by the catcher within ten feet of the plate.

Home Run—A complete circuit of the bases made on a hit without the help of a fielder's error.

In-field—First, second and third basemen and short stop.

Out-field—Right, centre, and left fielders.

Passed Ball—A pitched ball which passes the catcher and allows the base-runner to advance a base.

Plate—The home base.

Pitcher's Box—The plate on which the pitcher must have one foot when delivering a ball to the batsman.

Sacrifice Hit—When the batsman purposely hits a ball in such a way that he is put out, with the view of advancing a base-runner.

Shut Out—An innings in which a side does not score a run.

Slide—When the base-runner to avoid being put out slides feet or head first to a base.

Stolen Base—A base obtained by a runner without help from a hit by a batsman.

Strike—When the batsman tries and fails to hit a ball delivered by a pitcher or does not strike at a fair ball.

Strike Out—A batsman strikes out when three strikes have been called upon him.

Triple Play—A play in which the ball is handled quickly enough to retire three men.

Wild Pitch—A ball pitched out of the reach of the catcher, which allows a base-runner to advance a base or bases.

Wild Throw—A ball thrown out of reach of the fielder to whom it was directed.

SIMPLIFIED RULES.

1. Each side consists of nine players.

2. An innings is complete when three men on the batting side are out. Three men being out constitutes an innings.

3. A game consists of nine innings played by each side.

4. The players go to the bat in regular order: the first man on the list of his side being the first man to bat in the first innings. Afterwards the first batsman in an innings is the one next on the list to the third batsman out in the previous innings. But, if a base-runner is the third man retired, and this occurs while a man is at bat, such batsman shall bat first in the succeeding innings.

5. The batsman must not step out of his position, known as the batsman's box, and must strike at every ball delivered by the pitcher that crosses the plate between the knee and the shoulder.

6. If the batsman fails to strike at a good ball so delivered, the umpire must call "One strike."

7. If the batsman strikes at any ball, whether it be a good or bad one, and fails to hit it, the umpire must call "One strike."

8. When the umpire has called "Three strikes," the batsman is out, providing the ball constituting the third strike be caught by the catcher before it touches the ground. If the catcher fails to hold the ball, the batsman has an opportunity of reaching first base, but the catcher may recover the ball and intercept the base-runner by throwing it to first base. If the ball reaches the base before the runner, he is out.

9. If the pitcher delivers a ball which does not pass across the plate between the batsman's knee and shoulder, the umpire must call "One ball."

10. If the umpire calls four balls, the batsman is entitled to his first base.

11. If the batsman hits the ball so that it falls outside

the foul lines, it is a foul hit, and does not count, provided that if a fielder catches it before it touches the ground, the batsman is out.

12. If the batsman hits the ball so that it falls inside the foul lines, it is a fair hit. Any ball hit to ground inside the foul lines is a fair hit, unless it should roll outside the foul lines before reaching first or third base, as the case may be. Any ball hit to ground outside the foul lines which rolls inside the foul lines before reaching first or third base, as the case may be, is a fair hit.

13. The batsman becomes a base-runner immediately he has made a fair hit; immediately after four balls have been called by the umpire; immediately after three strikes have been called by the umpire, provided that the catcher has not held the ball at third strike, as provided in Rule 8; if any part of his person be hit by a ball delivered by the pitcher, unless the hit be upon the forearm; and immediately after the pitcher has illegally delivered a ball.

The batsman is out:—

14. If he fails to take his position at the bat in his order of batting.

15. If he fails to take such position within one minute after the umpire has called for the batsman.

16. If he makes a foul strike. To make a foul strike is to hit the ball when not standing in the batsman's box, as provided in Rule 5.

17. If he attempts to hinder the catcher from fielding or throwing the ball.

18. If, while the first base be occupied by a base-runner, three strikes be called on him by the umpire, except when two men are already out.

19. If, while attempting a third strike, the ball touches any part of his person.

20. If, after two strikes have been called, the batsman obviously attempts to make a foul strike.

21. If the ball struck by him, whether in a fair or foul hit, be caught before touching the ground.

22. If the catcher catches the ball at third strike before it touches the ground.

23. If, after he has made a fair hit, or after the third strike (provided in the latter case that the catcher has not caught the ball before it touches the ground) he is touched by the ball in the hands of a fielder before he has reached the first base.

24. If, after he has made a fair hit, or after the third strike, as mentioned in the preceding rule, the ball is securely held by a fielder who is touching the first base with any part of his person.

25. If, in running the last half of the distance from home-plate to first base, he runs outside the three-foot line, unless to avoid a fielder attempting to field the ball.

The batsman is entitled, without being put out, to a base:—

26. When the umpire has called four balls.

27. If the umpire has awarded a base to a succeeding batsman, and the base-runner is thereby forced to vacate the base held by him.

28. If the umpire calls a balk.

29. If the ball, delivered by the pitcher, passes the catcher and touches the umpire or any fence or building within ninety feet of the home plate.

30. If, upon a fair hit, the ball strikes the person of the umpire standing upon fair ground.

31. If the fielder stops or catches a batted ball with his hat or any part of his dress.

The base-runner must return to his base, and is entitled to do so without being put out:—

32. If the umpire declares a foul hit.

33. If the umpire declares a foul strike.

34. If the umpire declares a dead ball.

The base-runner is out:—

35. If, in running from first to second base, from second to third base, or from third base to home plate, he runs more than three feet from a direct line between such bases, to avoid being touched by the ball in the hands of a fielder.

36. If he in any way obstructs a fielder attempting to field the ball, or intentionally interferes with a thrown ball.

37. If, while the ball is in play, he is touched with the ball in the hands of a fielder, unless some part of his person is touching a base he is entitled to occupy. The ball must be held by the fielder while touching him. In running to first base, he may overrun the base, and will be allowed to return to it without being put out for being off his base. Provided he must return at once and retouch the base, and afterwards he may be put out as at any other base. And if, after overrunning first base, he should attempt to run to second base or should turn to the left as though about to do so, he may be put out To return to and retouch an overrun base, the runner must turn to the right.

38. If he should start to run on a fly ball and he is touched with the ball after it is caught before he has returned to his base. The base-runner must not run on a fly ball until it has been momentarily held by a fielder. A fly ball is a ball caught either in fair or foul territory before it touches the ground.

39. If he is put out when forced to vacate his base under the following circumstances: when the batsman becomes a base-runner, the players occupying the bases in advance of him must vacate those bases in favour of the batsman or succeeding base-runner, and cannot return to such bases unless the batsman is put out at first base. Then they have the privilege of returning to their bases.

40. If he is hit by a batted ball before it touches a fielder.

41. If, when running bases or returning to a base, he fails to touch each intervening base.

42. If, when the umpire calls "play" after any suspension of a game, he fails to return to and retouch the base he occupied when "time" was called.

43. A run is scored by a base-runner running one hundred and twenty yards and touching first base, second base, third base and home plate in succession.

Bibliography—*The Art of Pitching and Fielding; The Art of Batting and Base Running*, H. Chadwick (New York, 1886); *Baseball Guide for* 1876, R. M. De Witt; *Baseball* (Oval Series, 1896), R. G. Knowles and R. Morton; *Baseball*, J. M. Ward (Philadelphia, 1888).

BASKET-BALL—[*See* UNIVERSITY CONTESTS.]

BASS, BLACK—There are two species of Black Bass, the small-mouthed Bass (*Micropterus dolomieu*, Lacépède) and the large-mouthed Bass (*Micropterus salmoides*, Lacépède). The methods of angling for them are the same. Their appearance and habits are similar, though the small-mouthed Bass prefers swift and rocky streams, while the large-mouth is more at home in lacustrine waters and sluggish streams. When inhabiting the same waters their game qualities are equal, though the small-mouth in swift streams is more active than the large-mouth in still waters.

In England—Several years ago, the small-mouthed Bass was placed in several small lakes in England, but the experiment was a failure, as it is not suited to such waters. Had the large-mouthed been substituted, the broads and lakes of England might now be teeming with one of the gamest fish.

There exists an unwarranted prejudice against the Black Bass among British anglers which originated (as my friend Mr. R. B. Marston informed me) through the over-zealous assertions of the late George Sheppard Page and Professor

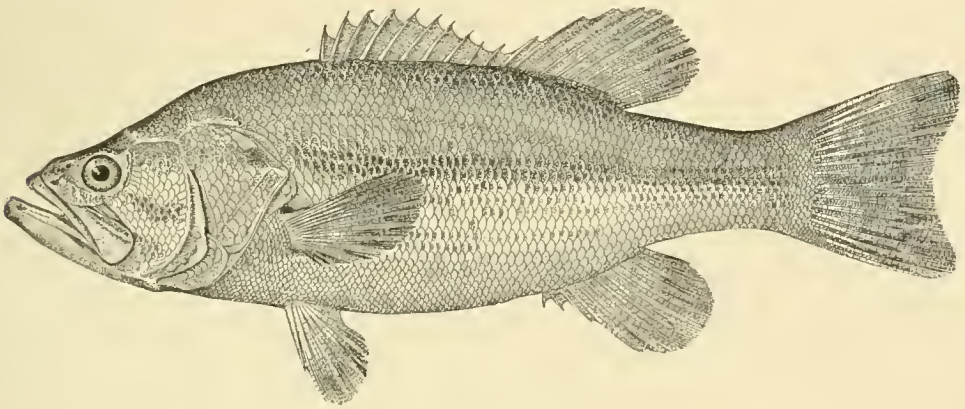
G. Brown Goode at a meeting of British anglers during the Fisheries Exhibition in 1883. In their efforts to convince their auditors of the grand game qualities of the Black Bass, they unwittingly conveyed the impression that it was a very predatory and voracious fish, as bad as the Pike, if not worse. This idea, of course, is entirely erroneous. The Black Bass is not at all a piscivorous fish in the true meaning of the term. The character of a fish's teeth indicates its food. The Pike, having sharp, conical teeth, is pre-eminently piscivorous, as such teeth imply. So, in a measure, is the Brown Trout, which has sharp, conical teeth, though not so numerous or stron as those of the Pike.

Food.—On the other hand, the Black Bass has villiform or brush-like teeth, much like the surface of a tooth-brush, which are incapable of wounding or cutting : such teeth indicate a diet of crustaceans and insects. As a matter of fact, seventy-five per-cent. of the natural food of the Black Bass consists of crayfish, but like all carnivorous fishes, the Bass occasionally swallows small fish, frogs, &c., especially if they are found in a disabled condition ; and this explains why a minnow proves a good bait, and is eagerly taken by a Black Bass when he may ignore a school of lively minnows swimming near him. Those of the school are hard to catch, while the one on the hook is easily captured.

There are countless small lakes in America where the Black Bass, Trout, and many other species of fishes have co-existed from time immemorial, showing conclusively that the Black Bass is not the enemy of other fishes, and does not militate against their increase in the same waters, even when of an isolated character. On the contrary, the Black Bass, under such circumstances, does not multiply so rapidly as the other species, notwithstanding that it guards its eggs and young. The unfortunate introduction of the German Carp in American waters has been very disastrous to the Black Bass, owing to the spawn-eating proclivities of the intruder. It astonishes the American angler to learn that the English are so prejudiced against the Black Bass, although tolerating such a marauding fish as the Pike, to say nothing of spawn-eaters like the Carp, Tench, Dace, Perch, &c.

Game Qualities—The Black Bass is a percoid fish and much higher in the scheme of evolution than the Salmon or Trout, and in game qualities is their peer—"Inch for inch, and pound for pound he is the gamest fish that swims." "He has the arrowy rush and vigour of the Trout, the untiring strength and bold leap of the Salmon, while he has a system of fighting tactics peculiarly his own." These words seem to me, after twenty-five years' experience, as true as ever.

Distribution—The Black Bass is capable of a much wider geographical distribution than most other game fish. In America, its range extends through twenty-five degrees of latitude and thirty degrees of longitude, which shows that it can withstand very great variations of temperature and vicissitudes of aquatic life.



Black Bass.
(By kind permission of the Editor of *Forest and Stream*).

In Germany its introduction has been very successful, especially that of the large-mouthed Bass. It has also been transplanted to France, the Netherlands, and other countries.

Fly-Fishing—The methods of angling for Black Bass are fly-fishing, minnow-casting, still-fishing, and trolling. Fly-fishing, of course, comes first in importance. The Black Bass rises to the artificial fly as eagerly as the Salmon or Trout, and perhaps under more varying conditions. While it has the boldness of either, it is more wary and intelligent, and must be fished for with corresponding caution, for inasmuch as it is only in comparatively shallow water that any fish rises to the fly, it follows that all due caution must be exercised to keep out of its sight.

If fishing from a boat, the angler should keep in deep water and cast toward the shallows or shore. If fishing from the bank, he should

stand well back from the shore and make long casts, or be screened from observation by trees, bushes, &c. If wading, which is the preferable plan, he may fish either up or down stream, but fishing down stream is preferred in America, particularly in swift streams, as the line is thereby always straight and taut, and a more natural appearance is given to the fly.

The best time for fly-fishing for Black Bass is late in the afternoon, toward sunset, and during twilight. The early morning hours are also favourable; but, except on very dark, cloudy days, the angler will catch nothing for his pains during the hours of mid-day. The reason for this is that all fishes feed mostly at night, and in shallow water; consequently, they are found in such situations at the times mentioned, approaching or departing from their feeding grounds.

The method of casting is about the same in vogue for wet-fly fishing for Trout. One or two flies may be used in the cast. The dropper, or hand-fly, should be three or four feet above the stretcher, or tail-fly. The leader, or casting line, should be from six to nine feet of good, round, single gut. Almost any good "general" Trout fly of large size, tied on hooks No. 4 to 7, will answer for Black Bass. The Coachman, Red Ibis, Professor, Grizzly King, Alexandra, Montreal, &c., and small Silver Doctor are all good flies, as also the various hackles (Palmers), if made large and bushy. Among the best flies used in America are my Polka, Henshall, and Oriole.

Moderately long casts, about fifty feet, should be employed for Black Bass fishing, though if there should be a brisk breeze with ruffled water, somewhat shorter casts will answer. The line should be always straight and taut. After the cast is made the flies should be gently roved or drawn from side to side with jerky or tremulous motions, to simulate the movements of a natural fly. They should be permitted to sink frequently for several inches, or a foot, in likely-looking places, especially in lake or pond fishing.

The angler should strike upon sight or touch; that is, he should instantly strike upon feeling the slightest touch of the fish, or upon seeing its swirl. Striking is merely a turn of the wrist with a taut line, which is sufficient to set the hook. After the fish is hooked, he should be kept on a bent rod and taut line, never under any circumstances having slack line. When the Bass leaps from the water, which he may do half a dozen times before he is in the landing-net, the straightening of the bent rod is sufficient to keep the line taut while he is in the air, but he should be followed into the water by slightly lowering the tip, if necessary, to prevent the hook from tearing out with the weight, and the instant he reaches the water he should again feel the spring of the rod. He should be reeled into close quarters as soon as possible, and kept near the surface of the water. The spring of the rod will eventually cause him to turn on his side, when he should be taken into the landing-net.

The most suitable rod is ten feet three inches long, and weighs not more than eight ounces. Any good Trout fly-rod of about this description will answer. The line and click-reel ordinarily used for Trout fishing do very well for Black Bass fishing.

Minnow-Fishing—Casting the minnow for Black Bass is a very artistic mode of fishing. It requires special tools and tackle. In America the short, single-handed rod known as the "Henshall" rod is universally employed. It is eight feet three inches long, and weighs eight ounces for an ash and lancewood, or greenheart rod, or seven and a half ounces for a split bamboo. It is somewhat stiffer than a Trout fly-rod, but pliable enough for all the emergencies of playing a fish. A first-class multiplying reel is a *sine quâ non*, as the bait is cast from the reel. A braided line of undressed silk of the smallest calibre should be used. Twisted lines kink too much for casting. A leader, or casting-line of gut, is not required, the swelled hook being attached directly to the reel-line by a small brass swivel. A sinker of the smallest size may also be affixed, if necessary.

The minnow, from two to four inches in length, is hooked through the lips, and reeled up to within a foot or two of the tip of the rod, when it is cast to the left or right for a distance of from seventy-five to one hundred and fifty feet, which is easily done with the tackle mentioned, and a little practice. The cast is not made over-hand or over-head as in fly-fishing, but under-handed—that is, from below upward—the tip of the rod being a foot or two from the ground or water at the beginning of the cast. The running of the reel must be controlled by the thumb, which should maintain a gentle, but uniform, pressure upon the spool to prevent over-running or backlashing, and when the bait reaches the desired spot the thumb stops the reel by a stronger pressure. The bait is allowed to swim about, if lively, and the line slowly reeled in, giving a natural, swimming motion to the minnow; a new cast is then made in another direction. The playing and landing of the Bass is the same as in fly-fishing.

Still-Fishing—Still-fishing is about the same as Perch fishing in England, and the best Perch tools and tackle may be employed, when of sufficient strength. A float may be used, though it is generally dispensed with in America, except where the bottom is grassy or mossy. Usually still fishing is practised from an anchored boat. Any time of day will answer for still-fishing or minnow-casting, though the Bass will be found in deeper water during the middle of the day.

Trolling—Trolling is practised with a stiffer rod than that for minnow-casting or still-fishing, and a somewhat larger line—one of flax will answer—about the size used for large Perch. The bait may be a large minnow, hooked through the lips, or a trolling spoon or spinner of small size. One hook is all-sufficient. A minnow, hooked through the lips with a single hook, presents a more natural appearance and is far more effective than the most approved spinning-tackle, with its forbidding array of flying hooks.

Trolling is practised from a boat, which is propelled over the feeding-grounds at a speed varying according to local conditions.

From fifty to one hundred and fifty feet of line are let out from the reel. The Bass hooks itself when it strikes.

JAMES A. HENSHALL.

BASS, SEA (*Labrax lupus*). [*See* SEA-FISHING.]

MEASUREMENTS, ETC.—Length of head $3\frac{3}{4}$ to 4, of caudal fin $5\frac{3}{4}$, height of body $4\frac{1}{4}$ to $4\frac{3}{5}$, in the total length. *Eye*—diameter $4\frac{1}{2}$ to 5 (or even proportionately larger in very small examples) in the length of the head, $1\frac{1}{4}$ to $1\frac{1}{2}$ diameters from the end of the snout, and $1\frac{1}{4}$ apart. Posterior edge of the preopercle strongly serrated, the largest tooth being at its rounded angle, and three more forwardly directed along its lower limb. Two opercular spines, the rest of the bones of the head unarmed. Jaws of about the same length anteriorly; the maxilla reaches to beneath the first, third, or middle of the orbit. Nostrils patent. *Teeth*—villiform in the jaws, the outer row in the upper somewhat larger than the rest: in an almost crescentic spot on the vomer, in a band on the palatines, and also at the base of the tongue. *Fins*—occasionally the first spine in the anterior dorsal fin is absent, the first two are short, the third two-thirds the length of the fourth, which is equal to the two succeeding which are the highest and slightly exceed the length of the rays of the second dorsal. Third anal spine slightly longer than the second. Caudal forked. *Scales*—ctenoid. *Lateral-line*—nearly straight, passing from the upper edge of the opercle to the centre of the base of the caudal fin. *Intestines*—five short cœcal appendages. *Colours*—gray on the back, becoming silvery on the sides and beneath. A dark spot at the upper half or two-thirds of the opercle, darkest posteriorly. Dorsal, anal, and caudal fins stained with gray externally; pectorals and ventrals yellowish-white. The young have usually some fine dark spots scattered over the body.

Day, *Fishes of Great Britain and Ireland*, vol. i. p. 9.

BEAGLES. [*See* DOGS.]

BEAGLING. [*See* HUNTING.]

BEAR-SHOOTING

AMERICA, NORTH—Bears are the most widely distributed of all North American big game, and may be encountered at any moment almost anywhere in the Rockies.

There are three species of Bear in North America, the Grizzly (*Ursus horribilis*), to which the following notes chiefly apply, the Black Bear (*U. americanus*), a much smaller and less formidable beast, and the Polar (*U. maritimus*) [*See* BEAR, POLAR]. The so-called Brown Bear of North America is a variety only, though many sportsmen insist on regarding it as a distinct species.

Grizzly Bears are not nowadays to be found east of the Rockies, and even in that range there is sometimes considerable difficulty in procuring a trophy.

They constantly change their quarters according to where the best food supply is to be found. In the early spring, when the skunk cabbage shoots forth its handsome yellow flower, Bears are high up the mountain sides digging at the roots. Later on, when putrid salmon strew the river banks, they will be found revelling in a nauseous meal. Where salmon do not exist, they will pick up a living on beetles and other insects until the berries ripen in the fall, when they claw down the luscious fruit and lay on their supply of fat preparatory to hibernating.

Baiting—Of the various modes of hunting Bears, by far the most successful and pleasant is baiting for them. This can, however, only be accomplished in a country plentiful in deer; which should be killed and left in suitable places, care being taken to select spots which the sportsman can easily approach unperceived.

Bears make little use of their eyes, but are keen-scented, quick of hearing, and surprisingly active.

The bait must be inspected within two or three days, and should it be found partially eaten or buried, the hunter should lie in wait at dawn or nightfall for the Bear, taking care to approach up-wind and noiselessly. In places where Bears have been much hunted, they become nocturnal in their habits, but otherwise they frequently wander abroad during the daytime.

A wounded or seemingly dead Bear should be approached with caution; for even when shot through the heart, it can still prove dangerous at close quarters.

Vulnerable Points—Through the neck, if it be sufficiently exposed, is the best shot; otherwise spine, shoulder, or head is good enough.

If, as sometimes happens, the hunter comes upon a grizzly with cubs, let him pay due attention to the old Bear before meddling with the cubs.

Hunting with Dogs—Another mode of hunting Bears is with well-trained dogs, which quickly "tree" the black Bear, while a grizzly, being unable to climb, will be held at bay until the sportsman comes up.

In Canoes—On certain rivers whose banks are composed of mud flats, or fringed with berry-bearing bushes, Bears are hunted in canoes which are paddled noiselessly in and out of every irregularity of the bank, until either a Bear is seen grubbing in the mud or eating

dead salmon, or can be heard dragging down berries. If a clear view of him cannot be obtained, there is nothing for it but to wait patiently until he appears, for the underwood in districts usually haunted by Bears is so dense that to approach unheard would be impossible.

Choice of Ground, &c.—The best furred Bears come from the north coast of British Columbia and up the Skeena river, where they are mostly killed in May just after leaving the *cache*, when the fur is at its prime.

Bears are in the finest condition from September to May, according to climate; after the end of May the wool falls out, the long hairs slip, and the pelt becomes valueless until the end of September.

The mode of hunting is most arduous and uncomfortable. While the snow is still deep in the timber, but rapidly melting on the mountain side, a likely valley must be sought, the sides of which rise almost perpendicular in this country.

Here, on swampy ground surrounded by patches of snow, the tent must be pitched and no fire lighted. Morning and evening the hunter scans the steep rocky sides of the valley or cañon until high up he spies a bear. Carefully locating it, he starts on a perilous climb of an hour's duration, and is usually unable to see the Bear at the end of it.

Sometimes from a spot below he may see as many as seven Bears, but on getting close to them, all are hidden by great boulders of rock.

If the sun shines, it becomes too dangerous for climbing; warning avalanches come crashing down, and if one does not fall on a man, his weight is sufficient to start another. This class of hunting is suitable only for Indians.

Bears' *caches*, as they call the holes wherein they spend the winter in a more or less torpid condition from about December to April or May, are often discovered during the summer, and if the exact spot can be found when deeply covered with snow it is almost certain to contain a Bear; here, too, the she-bear gives birth to her young.

The largest Bear in the world, excepting the Polar Bear, inhabits Alaska, and does not appear to have received due attention from any naturalist. It differs somewhat from the grizzly in uniformity of colour and in the shape of its claws, and is said to be plentiful in the dense country around Mount Elias.

A ·500 Express is, taken all round, the finest weapon for the work.

No one who can handle a rifle should require to give his Bear more than one bullet. The grizzly being an animal of uncertain temper, it is well to reserve the second barrel, in case of accidents. J. TURNER TURNER.

INDIA—The Sloth Bear (*Melursus labiatus*) is the only species found throughout India to the south of the Himalayas. It is common in the hill ranges and jungles, more especially where the ground is rocky. Its habits are nocturnal; during the day it lies up in thick jungle or in caves and recesses among the rocks. It may occasionally be met with by sportsmen out stalking early in the morning or late in the afternoon; but as a rule, except when driven out in the course of a beat, it will not be observed during the day. Its food consists of the jungle fruits, ants, beetles, and other insects, and it is also fond of honey, and climbs the forest trees to procure the honeycombs which hang from the boughs. Instances have been known of its eating flesh, but they are rare. Like all wild animals it avoids man, but may attack when suddenly come upon; and many natives are mauled by bears that they have disturbed. In a beat, bears coming out of holes in the rocks at the last moment, when the beat is close to them, often charge the beaters. On the whole, however, this bear is by no means a dangerous animal before it has been fired at and wounded, but when wounded and followed up, it will often charge. The writer discredits the popular idea that the bear rises on its hind legs and hugs its adversary. He has never seen a charging bear rise on its hind legs. Bears can stand erect, and do so to look about them in long grass or jungle that they cannot see over on all-fours. The soles of their feet leave a print not unlike that of a child's foot. Their cylindrical bones resemble the same bones in a human skeleton more closely than those of most other animals; and this formation enables them to assume the erect position. Their claws are long, and with them they dig up the ground for roots, ants, and termites, and turn over stones to get the beetles and insects that lodge there. The female has generally two cubs, sometimes three, which remain with her till nearly full-grown. When young, she carries them on her back. In a beat, a she-bear will often be seen galloping along with her cubs hanging on to her. The cub clings to the long hair on her shoulders with his fore-legs, the hind-legs hanging down her side well clear of the ground. The "Indian Black Bear," as it is also called, has long and shaggy hair, especially on the top of the shoulders; and on the breast is a large yellowish crescent-shaped mark. The muzzle is of a dirty white. As the hair is very coarse, an Indian bear's skin is not of much value as a trophy.

Bears in India are not usually made a special object of sport. They are generally shot when men are out tiger-shooting—on days when no tigers are abroad. A chance beat on suitable ground often produces a bear or two. Bears are turned out in the course of a beat for tiger, but on such occasions they are not fired at. They are driven in the same way as all large

Grizzly Bear

game has to be driven in India. A crowd of beaters are collected from the nearest villages, a few of whom have tom-toms and other native musical instruments, useful not only in waking up the animals and keeping them moving, but also in keeping the beaters in line. A large number of stops have to be placed in trees on either side of the intended drive to prevent the animal breaking out at the side. The sportsman is placed in a tree or on a rock in front, and if the drive has been properly planned and carried out (the chief, if not the only, secret of success in this kind of shooting), the animal passes within a few yards, and, whether walking or galloping, affords a very easy shot.

Another way of shooting bears is to visit before daylight the rocks, in which they are known to lie up, and to intercept them as they return from their nocturnal rambles. They are also shot by sportsmen when stalking bison or deer. The sportsman, walking through the jungle, sees them by chance and stalks them; but it is no good going out with the special object of stalking bears, as they are not numerous enough to make it worth while, so far, at least, as the Indian Black Bear is concerned, though it is different with the Himalayan Black Bear and the Brown Bear.

Weapon, &c.—Every sportsman has his own fancy as to the best rifle for the work. The writer prefers a good double-barrelled ·500 Express to any other rifle for all kinds of soft-skinned big game. It is comparatively light, can be quickly manipulated for a running or snap shot, and better shooting, especially with running shots, is made with it than with a heavy rifle. The shot, if at all properly placed, will certainly kill the animal in a few seconds. The only objection to it is that, in the case of a charge, an Express bullet

Sloth Bear.

Average height at shoulder, 2 ft. 6 in. Average length from head to root of tail, 5 ft.

does not give the knockdown blow of a heavier solid bullet, and is therefore less likely to stop the charging animal. On the other hand, the proportion of charges to animals fired at is extremely small, and the weapon that will bring most game down is the preferable one. At any rate, a ·500 Express is quite big enough for a bear. In firing at a bear it is necessary to remember that the animal is not so large as it looks, and that a good deal of the apparent size is due to its long hair. All shots should be aimed so as to enter the cavity of the chest. Behind the shoulder, through the point of the shoulder, and in the centre of the yellowish mark on the chest, according to the position of the animal, are the usual shots. Through the back of the skull or neck is also fatal, but the body shot is recommended, the mark being greater.

J. D. Inverarity.

[The other Indian Bears are the Black (*U. torquatus*) and the Snow, or Isabelline (*U. isabellinus*), both of the Himalayas. The former is chiefly to be found in the forests at the base of the range, where it lives on fruits, acorns, the crops of the villagers, and occasional carrion. It feeds at night and is usually shot as it comes to or leaves its feeding-ground.

The Isabelline Bear, on the other hand, is chiefly encountered along the snow-line. Like the foregoing species, it hibernates; and its food also differs little, except in a preference for roots.]

POLAR (*Ursus maritimus*).

Habitat—It ranges over the whole of the discovered tracts of the North Polar regions, but to a greater extent in the southern part of the Arctic zone than further North. In the expedition of Sir George Nares in 1875-6, no bears were seen north of lat. 79°, although travelling parties reached the latitude of 83° 20. Previous to this, however, bears had been seen, and killed, though not in great quantities, by the United States exploring expedition under Captain Hall as far north as 81° in the locality visited by Nares. They are found in great numbers in Franz Josef land, in Novaya-Zemlya, in Spitzbergen, along the east coast of Greenland, in Davis Straits and Baffin's Bay, and in the numerous channels and inlets leading thence, and they are encountered as far south as Hudson's Strait and Bay, and along the Coast of Labrador. They might, with a fair show of reason, be regarded as aquatic rather than terrestrial animals; for not only have they been found on icefloes and icebergs hundreds of miles from any land, but I have come across them swimming unconcernedly in the water with no ice in sight and more than eighty miles from land!

Colour, Size, Habits, &c.—Their colour is sometimes of a very pure white, the tip of the fur in places being tinged slightly with a yellowish hue. Their feet are large, flat and muscular, being armed with formidable claws, and they have very strong and powerful teeth. They do not hug, as is alleged of their congeners the brown bears, but bite and use their claws freely. It is averred that they never eat their victims until life is extinct, but will play with them as a cat with a mouse.

The Polar bear attains a great size. I have myself killed them over 10½ feet in length, and weighing something like half a ton, and they have been known to exceed even 13 feet in length; but this is, I believe, quite an abnormal size, the average being about 7 or 8 feet from the tip of the nose to the end of the tail. They possess enormous strength. On one occasion we disturbed a bear in the enjoyment of his feast on the ice, which proved to be the entire body of a white whale, fifteen feet in length and weighing about 3 or 4 tons. This whale was presumably found by the bear floating dead in the water, and must have been dragged by the bear on to the ice where we found it. It is difficult to conceive how this could have been accomplished, for it would have taken at least half-a-dozen strong men with ropes and other appliances to have hauled it up on to the ice-floe.

The flesh of the bear is eatable when nothing better can be obtained, but it is coarse and rank and terribly tough; the liver, however, is to be avoided as an article of human food, for it has the reputation of producing severe bowel complaints.

Their rate of progression over soft snow is wonderful, and when once alarmed, unless stopped by a bullet, they speedily place a safe distance between themselves and their pursuers. Their powers of locomotion in the water are also marvellous, and it is by no means an uncommon incident to see them plunge after a seal, and pursue it in its own element, but whether with a successful result I have never yet been able satisfactorily to determine. They will watch a seal for hours together on an icefloe, and if unable to approach it without being observed, have been known to slip quietly into the water, and swim towards it *under the ice*, and then emerge suddenly alongside of their prey, so that if it takes to the water it falls into the clutches of the bear, and if it remains on the ice it soon falls a victim to its powerful adversary.

Unless rendered fierce by pain or hunger, they will very rarely attack man. On one occasion only can I call to mind their assuming the offensive, not being themselves attacked or wounded. In that instance, it was a female accompanied by her cub. We first sighted them on a piece of ice, and immediately pulled lustily towards them in our boat. Without, however, waiting for us to come to close quarters the bear, followed by her little one, plunged into the water, swam vigorously towards us, and would certainly have succeeded in getting into

the boat had not a bullet from my rifle terminated her existence. The cub we captured alive and took aboard the ship. It was a most ferocious little beast, and was just as wild and untameable after it had been on board three months, as on the day of its capture. It sounds somewhat unnatural, but the only food it had for the first few days after it came on board was the flesh of its own mother, which it devoured greedily and with apparent enjoyment.

On another occasion we had observed a bear reposing apparently asleep on the ice. I proceeded to stalk it, but the noise made by my breaking through a piece of rotten ice disturbed the animal in his slumbers and caused him to get up. Thinking he was contemplating a retreat, I took a hasty and long shot, which wounded him badly and caused him to slink away behind some hummocks. Running up somewhat imprudently in my haste to secure his skin, I suddenly came across the beast, which at once rushed at me open-mouthed, when, fortunately for myself, I succeeded at about five yards in planting a bullet in his head, which effectually put a stop to any further developments.

POLAR BEAR.
Average height at shoulder, 4 ft. 3 in. Average length from head to root of tail, 8 ft. 3 in

These are the only instances that have come under my personal observation, in which the Polar bear has assumed a disposition to act on the offensive. On all other occasions they have been exceedingly timorous when scenting danger.

The majority of bears that are killed by the vessels engaged in sealing or whaling die

in the water, for on the approach of a boat, unless they happen to be on an extensive field of ice, they invariably endeavour to effect their escape by swimming. As a boat can be propelled at double the speed at which a bear can swim, the poor beast is very soon overhauled, when a bullet through its brain kills it.

This, however, is the poorest of sport; in fact, it is no sport at all, for the element of danger, which makes the pursuit of savage animals so attractive, is altogether wanting.

Pursuing a bear on a large icefloe, or pack, is, however, altogether different. Prudence has then to be exercised in approaching the quarry; care has to be taken to avoid stepping on treacherous pieces of young ice; and when after, perchance, much trouble and exertion, the hunter succeeds in approaching within the desired range, more skill, care and dexterity are required in handling the rifle in order to ensure killing, than would be the case if the beast were swimming in the water, where it would be comparatively harmless.

Vulnerable spot—My experience has taught me that the only vulnerable part of a Polar bear is the forehead. I have known several instances of bears being hit in other parts of the body, and they have either succeeded in making good their escape, or required another bullet to finish them. The head is, of course, a small mark, but a shot in it is instantaneously effective.

Rifle, &c.—I have always used a small Martini-Henry rifle with a ·45 solid bullet; but I am inclined to think that a good magazine rifle carrying a ·4 expanding bullet would be the best and safest for Polar bear shooting.

Range—Unless a bear is actually making off at speed over the ice, I should deprecate firing at a greater distance than 15 or 20 yards; the nearer you are to the animal, the greater the chance of hitting it in a vital spot. They are wonderfully tenacious of life, and unless hit in the head will scamper away over the ice and through soft snow with perhaps two or three bullets in them, leaving behind a bright crimson trail on the otherwise spotless snow with which the ice is covered.

To sum up, the Polar bear is by no means a formidable beast to contend with, if the hunter is armed with a good magazine rifle, is a fairly reliable shot, and is prepared to undertake a trip to the "regions of thick-ribbed ice" in quest of his prey.

A. H. MARKHAM.

RUSSIA (Bear = *Russ. Médvyed*)—Though the number of bears killed within reasonable distance of St. Petersburg has of late years steadily diminished, these animals still abound in outlying Governments, such as Olonetz, where any sportsman able to spare a month or more, and to afford the expenditure of a considerable sum of money, may still be certain of a bearskin or two.

Bear shooting is a winter sport, for without snow to track them in, these shy rovers are not easily found; luckily for the sportsman, however, the Bear is a hibernating animal, and the first fall of snow not only drives him hurriedly to seek his winter-quarters, but also enables his enemies to track him to his chosen retreat.

Finding the Bear—The usual method is for the local sportsman to sally forth about the first fall of snow, in November, either alone or with his dog; that is, if he has one endowed with the gift of silence. He knows from experience how to mark down each animal to the sanctuary in which it had hoped to sleep through the winter; and having made careful note of the whereabouts of a number of occupied *berlogi*, as these hibernating dens are called in those parts, he hastens with his secrets to St. Petersburg, where, as the bears are not likely to emerge when once they have settled down for the season, he is able to dispose of each *berloga* for a sum of from 40 to 70 roubles (£4 to £7), according to the estimated size of its occupant. It is not improbable that he will thus sell his whole batch of bears, from one to a dozen, to a single amateur, who will then, as soon as convenient, set out from town well equipped with heavy rifle and small arms, or, if he be of an enterprising disposition, with no more than a bear-spear, though the practice of engaging the beast so lightly armed is well-nigh obsolete.

He must drive to his destination, the vehicle being in all probability the *Kibitka*, a tented sleigh drawn by a pair of horses, the latter being changed *en route* at the post-stations. At the end of his journey, a matter of a week or considerably more, according to the distance traversed and the state of the roads, he will lodge at his guide's house; and, unless he is prepared to live on black rye-bread and *vodka*, with now and again a dried herring and a cup of weak tea, he should take with him a store of provisions.

Snowshoes will be found necessary, but they may generally be had of his host, and those of Olonetz, shaped like Norwegian *ski* (long and narrow, and not after the Canadian model), are perhaps the very best obtainable.

Then comes the march for the nearest *berloga*, a function in which a trained dog is of use in supplementing his master's memory; and at last the supreme moment arrives when the sportsman stands, rifle in hand, at the den mouth, having secured good foothold for his snowshoes, in order that they may not slide at an awkward moment.

Meanwhile the guide, aided by his dog, if he has one, begins the work of driving the bear from its retreat, a feat accomplished by either sending in the dog to bark at and worry it, or stirring up the sleeper with a pole pushed through

the frozen snow and piled brushwood that form the outer wall of its den.

Sooner or later, a question of seconds or minutes according to the disposition of the tenant, the walls of the sanctuary will part suddenly and, with a roar of rage or a howl of terror, the bear will, in nine cases out of ten, bolt for the nearest cover. In the tenth case he will charge. Either way, this is the moment to fire, and, if possible, kill at a shot, otherwise an accident, or at best a long snow-chase, ending possibly in disappointment, will follow.

Spearing—When bear-spears were in vogue, the sportsman would stand at the mouth of the *berloga*, receiving the brute's rush upon the steel-tipped point, and wrestle with the impaled monster until it succumbed. Sometimes the bear would succeed in hurling its assailant to the earth and tear savagely at his flesh before expiring.

Occasionally a bear is seen and shot in the vicinity of St. Petersburg, or a solitary marauder may at still rarer intervals fall to the axe of some peasant infuriated by the spoliation of his oat-patch or rye-field.

This being the first of the articles dealing with various forms of sport in Russia, it may be convenient to offer a few hints as to the several ways of reaching that country, and how to proceed when arrived there. Firstly, then, let the intending traveller provide himself with a passport, and let him have this properly *visé* by the Russian Consul, in Great Winchester Street, E.C. Armed with this necessary document, he may set out with an easy mind. St. Petersburg may be reached by sea or overland, as preferred. If the sea-route be chosen, there are frequent sailings from Hull during open navigation time, that is, roughly, between April 30 and October 30. It is advisable to obtain permission before attempting to pass firearms into Russia.

Without friends in Russia, or introductions to sportsmen, it is difficult to obtain sport near St. Petersburg; intending shooters are therefore warned to make full inquiries beforehand, through friends in the country, to prevent disappointment.

FRED WHISHAW.

BEARS, SCANDINAVIAN—The **Brown Bear** (*Ursus arctos*) of Northern Europe is distributed, though in gradually diminishing numbers, over the greater part of Norway and Sweden. It is, however, rarely, if ever, now met with south of latitude 59°.

Many hunters consider that there are two distinct kinds of Scandinavian Bear, whereas most naturalists are now agreed there is but one, though two skins are seldom found exactly alike. Some are black-brown, dark-brown, light-brown, yellow-brown, some grayish-brown with silver-tipped hairs, and others of a light yellow.

The Northern Bear retires into winter quarters about the middle or end of October according to the season, and at this period he falls into a lethargic state and ceases taking food. He comes out again about the middle of April, but this depends greatly on the season and locality.

On first coming out, he is lean and scraggy, and has only ant grubs to depend upon for food, which cause his flesh to smell strongly of formic acid. At this time he greedily devours any putrid carcass which happens to be in the neighbourhood. Later in the spring and summer the alpine sow-thistle (called *Tört* by the peasants), angelica and cow-parsnip afford him a good meal. Berries of every description from juniper to mountain ash, cloudberries (*Molte bær*), wild raspberries, whortleberries, cranberries, crowberries, &c., wasp and wild-bee grubs and combs, beetles, slugs, frogs, shell-fish near the fiords, barley, oats, and rye in the peasants' clearings in the forests, to say nothing of cattle, sheep and goats, all find a place in his bill of fare.

In Norway, Bears are more or less numerous in North and South Throndjem, Nordland, Hedemarken, Nedenæs, Bratsberg and Romsdal, Amts, also in Sætersdal, Thelemarken and Finmarken. In Sweden, in the forests of Jemtland, Dalecarlia and Vermeland, and in Swedish Lapmarken generally.

Of the various modes of hunting and killing the Bear, the most sporting way is with a good bear-hound in leash, in summer and autumn, accompanied by one follower only. In winter time several dogs may be used to range the woods and find the "*Hie*" (winter lair), the hunters traversing the snow on "*Ski*."

Dogs are absolutely necessary for the first-named mode of hunting, and prices ranging from five pounds to twenty-five are often given for a first-rate animal; an indifferent hound is worse than none at all. They may be bought in Jemtland and Ljusnadal in Sweden, and at various places in Norway.

The dogs should be fitted with a light leather harness round the chest and shoulders, to which a leading strap three yards long should be attached. They are most intelligent animals, with remarkably good scenting powers, and will lead the hunter straight up to his game. They should never be beaten.

Bears have a very keen scent, but neither their sense of sight nor hearing is so well developed. Should a Bear once realise that he is being hunted, he will travel down wind in the most provoking manner all day, keeping a few hundred paces to leeward of you, and unless you can reverse the situation, it is almost hopeless to follow him.

Being a wonderful stayer and first-rate climber (though rarely climbing trees), he can beat any dogs at clambering up or down rocky hill-sides.

Haunts of the Bear—During hot weather

he lies up for many days at a time, picking out a cool, swampy dell in the recesses of the forest, where he makes several large holes in which he wallows like a hog. He also retires to the high ground, above the timber-line, and digs out a bed in a secluded snow-patch, where he will remain for days, safe from flies and mosquitoes.

On cool days, with a northerly wind and drizzle, during August and September, he is usually out feeding, and the hill-sides where

Brown or Scandinavian Bear.
Average height at shoulder, 3 ft. Average length from head to root of tail, 6 ft. 6 in.

berries grow in profusion should be carefully scanned early and late.

When the first snow falls in mid October, the hunter has a good chance of tracking him and ringing him in his "*Hie.*" When this is found, it should be approached with caution and invariably upwind.

Stalking, &c.—Get as close as possible to a feeding Bear, keeping above him all you can. If his broadside be toward you, aim just behind his right or left shoulder as the case may be. If he be running from you, shoot anywhere, at his rump or tail; load quickly, and fire into his chest as he turns round to charge. If below you, aim between his shoulders or loins, or at the centre of back. Should you suddenly come on a she-Bear with cubs kill the old one first; if the cubs escape, fix up the mother's carcass and wait near, you will then probably bag them also. In the event of shooting a cub at some distance from the mother, load immediately, and hide near the body, for she will certainly turn up sooner or later. Should she rush in on you, making a loud angry "huff, huff," keep your nerve and shoot straight. Never approach a dying or apparently dead Bear with unloaded rifle, but go up cautiously with both barrels at full cock. Do not smash the skull with your finishing shot, as one in the neck or behind the head is equally effective.

Measurements—Scandinavian Bears will run up to nearly 900 lbs. in weight, and a skin has been measured 9 ft. 3 in. long and 6 ft. wide. The largest shot by the writer weighed about 800 lbs., having a skin 7 ft. 11 in., from

nose to tail, by 4 ft. 8 in. in width. Thirty-five years is about the limit of age.

Guns and Ammunition—A ·500 or ·450 express, by a good maker, firing a conical expanding bullet with a thick solid base and small, shallow hole at apex is a very useful weapon, being accurate at long ranges and effective at close quarters.

GERARD FERRAND.

BEAVER—[*See* TRAPPING.]

BIG GAME—

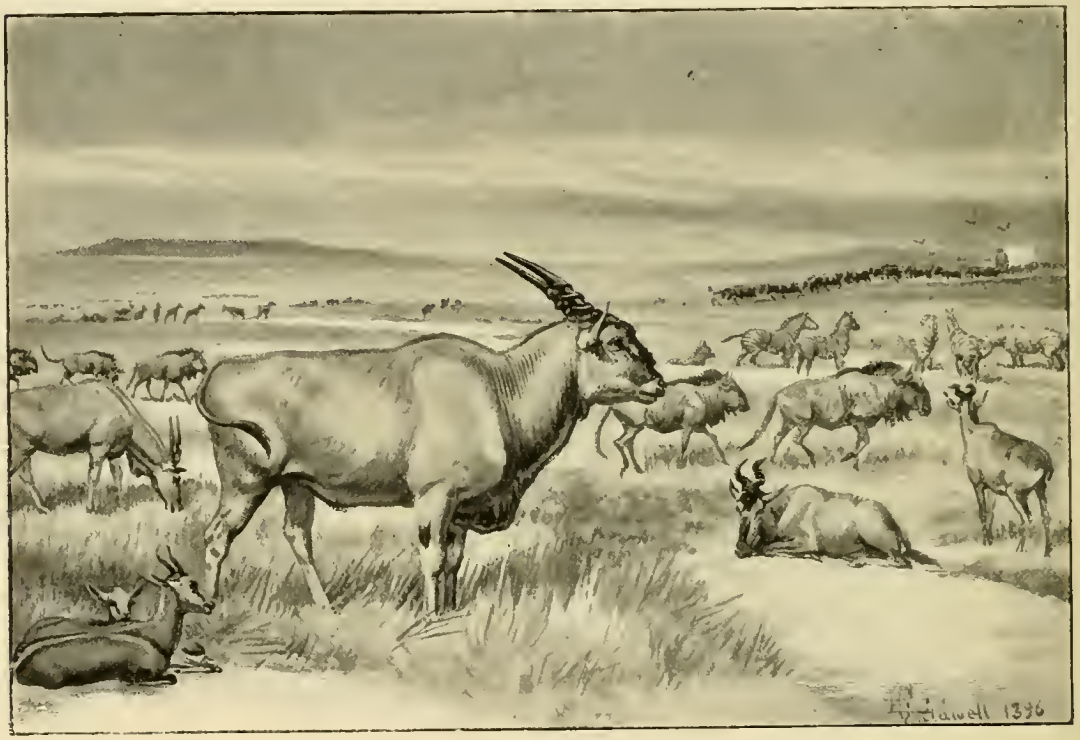
AFRICA—Although shooting in Africa has vastly changed since Captain Cornwallis Harris (the forerunner of the great hunters) first entered the present Transvaal country in 1836, and discovered a wilderness teeming with game, where the sound of the rifle had never yet been heard, there is still, if the sportsman will travel far enough, plenty of sport to be got among the great fauna. But the wonderful plenty of what may be called the great game-slaying epoch—1836 to 1890—is not nowadays to be found except in a few remote and difficult places. The sportsman, then, must be prepared to work much harder, and to travel very far before he can find and bag big game. He will discover, as a general rule, that heavy game in Africa is much wilder and more suspicious than of old, and that its pursuit involves much more difficult hunting. Many species of game that forty or fifty years ago grazed quietly in vast legions upon the open plains, and merely stared at the wagons as they plodded slowly across the Veldt, now drink by stealth during the night, feed across the flats at very early morning, and then betake themselves to the bush, where they find sanctuary during the hot hours. The mere pursuit of many of these animals frequently involves long and weary days in the saddle, starting from the wagons before sunrise, and often not coming up with the game until after several hours of steady spooring, which is undertaken by a native hunter or bushman. Perhaps another two hours are occupied in the actual chase, and the operations of skinning and cutting up, after which ensues a long ride of possibly another five or six hours back to the wagons. Not infrequently, after leaving camp at dawn, the hunter does not reach it again until dusk or even darkness has set in. To hunt successfully in South Africa nowadays, therefore, the sportsman should possess patience, endurance, an even temper, and a hardy frame. The actual shooting of the game, in itself not always an easy operation, is by no means the most difficult part of the business of modern South African hunting. The mere fatigue of riding under a burning sun for from eight to ten hours, or even more, day after day, over a rough, and often parched and waterless country, is no light matter. And even with good and willing native servants (not always to be counted upon), the labours of the day are by no means ended when the camp fire is reached. The skinning of specimen heads, and perhaps rare birds, which should never be entrusted to raw natives, cleaning guns, changing camera plates, writing up the diary, seeing that horses and dogs are fed, and many other necessary matters, have to be attended to before the wanderer can settle himself down by the fire, and enjoy in quiet his pipe and cup of coffee.

If, however, the sportsman is possessed of patience and a determination to succeed, he will find at the end of a week's hunting that his labours are becoming somewhat lightened. Every succeeding day hardens him and puts him in condition. The irksome detail of carrying a heavy rifle in the right hand during a long day while riding, which at first seemed so wearying, becomes a mere trifle as the muscles of the arm grow hardened to the task; and so with the rest of the labour. In some parts of Africa, where Tse-Tse fly abounds, and horses cannot be used, the fatigue of hunting on foot, no light operation in Africa, has to be faced. In these districts, however, bush and covert are more abundant, the game has been less disturbed, and shots are more easily obtained.

Hunting Grounds and Game—Thanks to the advance of railway communication in South Africa, the traveller can get within hail of his hunting ground, at the present day, with far more ease and at considerably less expenditure of time and money than was the case a few years back. It is not worth while lingering in Cape Colony, unless it be intended to shoot the smaller antelopes, such as springbok, klipspringer, steinbok, duiker, rhebok, bushbuck and bluebuck, or in the Orange Free State and Transvaal until close on the Limpopo River. If the sportsman is minded to shoot in Khama's Country, Eastern Matabeleland, the North Kalahari, and towards Lake Ngami and the Zambesi, his best plan will be to proceed by rail direct from Cape Town to Mafeking, and fit out there. In another year he will be able to rail direct to Palachwe (Khama's Town), or even to Buluwayo. If he mean to hunt in Mashonaland he will do best to rail to Johannesburg, and there procure his waggon, stores, and equipments; while for hunting the country between Beira and the Zambesi—on the whole the richest hunting ground now left to South Africa—he should proceed to Beira by sea from Cape Town or Natal. In this latter country buffalo are extraordinarily plentiful, and roan and sable antelope, eland, blue wildebeest, Lichtenstein's hartebeest, waterbuck, reedbuck, spotted bushbuck, inyala, koodoo, eland, pallah, tsesseby, Burchell's zebra, warthog, bushpig, lion, leopard, and hippos are abundant; while elephant, black rhinoceros, and giraffe may be occasionally

encountered. Hunting, however, must be performed on foot. Some useful information as to outfit and cost of hunting in this country is to be found in the article on **Buffalo**.

In Mashonaland and parts of Matabeleland—especially towards the Zambesi in the latter country—the big game to be found is almost identical with that just above mentioned. I may, however, except the inyala, which is only found in the bush country fringing the littoral between the Zambesi mouth and Amatongaland. In Khama's Country, Ngamiland, and the districts towards the Zambesi, countered. In the North Transvaal, in the bush country near the Limpopo, koodoo, pallah, and reedbuck are still to be found. In South-West Africa some good hunting grounds are still to be met with in the Kaoko Veldt (Damaraland), and in the Ovampo, Okavango River, and Cunene River Countries. Here game of much the same description as in Khama's Country and Ngamiland is to be encountered. Behind Benguella and Mossamedes, in Portuguese South-West Africa, elephant, plenty of buffalo, lion, leopard, zebra, eland, roan and sable antelope, koodoo, and other large antelopes,



The High Veldt of the Past.

giraffe, lion, leopard, cheetah, hippo, ostrich, Burchell's zebra, eland, gemsbok, koodoo, roan and sable antelope, waterbuck, lechwe, sitatunga, pookoo, pallah, hartebeest, blue wildebeest, tsesseby, and spotted bushbuck, klipspringer, steinbuck, duiker, and warthog are all to be found. Elephants and rhinoceros are, however, now nearly shot out, plentiful as they were in all these regions not very long since. In the Barotse Country, Upper Zambesi, and the neighbouring regions, buffalo will be found almost as abundantly as in any part of Africa. Many of the water-loving antelopes, such as lechwe and sitatunga, are also extremely plentiful in this region. Beyond the Zambesi, towards Central Africa, elephants will be again en- are to be found. Here, however, bush is prevalent; the country is most difficult to work in; native servants are bad and hard to get hold of; and neither horses nor wagons can be reckoned upon.

Outfit, Expenses, &c.—For hunting in all Africa south of the Zambesi, except in the Beira country and a few districts close to the river itself, wagons, oxen and horses can be employed. If the sportsman fit out at Mafeking or Palachwe for Khama's country, the Zambesi, Matabeleland, and Ngamiland, or at Johannesburg for Mashonaland, he may reckon upon buying a good second-hand wagon outright for from £80 to £100. Oxen in average times cost from £6 to £7 10s. per head: but

since the plague of rinderpest has fallen upon South Africa, the price of oxen has risen greatly, and may continue high for the next two or three years. The latest reports of rinderpest seem to point to more serious consequences. It should be remembered, too, that rinderpest has played sad havoc with game in all parts of Eastern and South Central Africa. A wagon and oxen can be hired in normal times for from £15 to £20 per month; a full span of oxen for a Cape hunting wagon is eighteen. Good, useful, South African horses, suitable for hunting purposes, can be bought at Kimberley (a capital market), Vryburg, Mafeking, or Johannesburg for from £15 to £25 each. A *salted* horse will cost the purchaser from £60 to £100. If the hunting trip take place in winter—the best season—from May to October, a *salted* horse is not necessary. The wear and tear of horseflesh is very considerable, and each sportsman should take with him not less than three reliable hunting-ponies. Mealies (Indian corn) should be carried on the wagon for feeding the stud, and nosebags save waste and are always useful. When travelling among native tribes, mealies and Kaffir corn can usually be purchased. These vary from 10s. a bag (205 lbs.), in an average season, to 35s. and occasionally more in time of drought and scarcity.

With each wagon are required a driver, whose wages should not exceed £2 10s. per month, and leader, from 10s. to £1 per month. Horse boys get from 10s. to £1. A native cook should be got for from £2 to £2 10s. per month. A small waterproof, oblong, canvas tent is a useful thing if the trip is to be a prolonged one. This can be lashed on to the buck-rail of the wagon. Every necessary article required for a hunting expedition (tea, coffee, sugar, tinned milk, tinned fruits and meat, mealie meal, Boer meal, pots, pans, &c.) can, nowadays, be procured at the stores at Mafeking, Johannesburg, and even Palachwe. Messrs. Whiteley, Walker & Co. of Mafeking, Palachwe, and Buluwayo, may be cited as among the most reasonable and reliable store-keepers in South Africa. Stores, horses, oxen, and waggons, if the expedition is made from South-West Africa, can be procured from Messrs. Mertens & Sichel, and other traders, of Walfisch Bay. It is a mistake to use heavy saddles; light English saddles, furnished with plenty of "dees," and bridles, should be taken out from England. Half a common cotton Kaffir blanket, folded small and placed under the saddle, saves horses many a sore back. Breeches, or knickerbocker breeches, of velvet cord, moleskin, or strong khaki, are best for the veldt. Strong brown boots and pigskin gaiters, or field boots, are best for foot and leg gear. A broad-brimmed felt hat, plenty of flannel shirts, and a strong cord coat for hunting in thorn and bush country, when following giraffe, complete the outfit. The coat can be strapped on the saddle bow; and a compass, a box of matches, and a full water-bottle should never be omitted when leaving the wagon in search of game. A small case of medicines, preferably in tabloids (Burroughs and Wellcome's tabloids can be strongly recommended) in case of fever or dysentery should be remembered. Warburg's Fever Tincture is excellent for both these complaints and should be included. When hunting in the waterless deserts of the Kalahari and Western South-Central Africa, where the loss of one's horse may mean disaster, it is a wise plan to fasten one's mount to the hunting belt by means of a cord or thin hide *riem*, the other end of which is made fast to the cheek-ring of the bridle. With a little practice, a South-African horse will almost always stand quietly for the shot. A few mongrel dogs are useful for baying lion, leopard, or other dangerous game, and guarding the wagons. A pointer should certainly be taken for finding feathered game. It may be noted that, at the end of a hunting trip, the whole outfit, including spare guns, horses and stores, can usually be sold, for about the prices paid for them, on the hunter's return to a frontier town and semi-civilization. With average luck and judgment, therefore, a South-African hunting expedition need entail nothing like the extravagant expenditure hinted at by luxurious travellers.

In East and Central Africa, where neither horses nor ox-wagons are used, the cost of hunting is a good deal increased by the number of native carriers required to convey stores, ammunition, guns and camp equipment. The actual cost—for food and wages alone—of a caravan of between fifty and sixty carriers will amount to from £65 to £75 per month. The sportsman will have further to bear the charge of native hunters, body servants and interpreters, as well as of arms and ammunition for the whole expedition, and other incidental expenses. It may be stated as a fact that a much longer purse is, nowadays, needed to hunt in East, Central, and North-East Africa—mainly owing to the cost of native transport—than in South Africa. In Somaliland, camels are now used for crossing the waterless desert which separates the coast line from the hunting country.

In addition to a large number of antelopes, such as koodoo, lesser koodoo, various hartebeests, blue wildebeest, pallah, eland, roan and sable antelope, Hunter's antelope, waterbuck, sitatunga, bushbuck, reedbuck, oryx, beisa, Clarke's, Waller's, and Thomson's gazelles, klipspringer, duiker, steinbuck, oribi, &c., lion, leopard, buffalo, giraffe, Burchell's and Grévy's zebra, and ostrich are to be found in these regions. Elephant and black rhinoceros, as well as hippopotami, are in some parts numerous. But it is to be remembered that hunting has to be conducted on foot;

and, as a general rule, it may be stated that the climate, especially near the equator, is much more exhausting than in South Africa.

Battery.—I come now to that most important subject, the choice of guns. For South Africa, at the present time, a useful battery would be the following:—

(1) A ·450 double Express rifle by a good maker, accurately sighted for shooting on the plains; this is a most useful weapon for all ordinary shooting; (2) a single ·303 Lee-Metford sporting rifle; (3) a single sporting Martini-Henry. This is one of the most useful rifles for all kinds of game in South Africa or elsewhere. Government ammunition can be procured at every up-country store, in itself a fact well worth remembering; (4) a double ·577 Express; (5) a 12-bore shot gun for bird shooting.

Such a battery is sufficient for all needs of the present day in South Africa. If, however, the gunner mean to hunt buffalo, and possibly elephant, or a stray rhinoceros, he may prefer a weapon of larger calibre. In such a case, a double 8-bore, carrying spherical bullets, may be recommended. For the ·450 and ·577 rifles solid, but not hardened, bullets, as well as hollow bullets should be taken. Many gunners have, like the late Sir Samuel Baker, much greater faith in the solid than the Express bullet. A very useful weapon for giraffe hunting is the Afrikander double rifle, carrying the ordinary Martini-Henry ammunition. Giraffe are usually shot from behind, at pretty close quarters, by the mounted hunter, and for this form of sport the Afrikander is an excellent weapon. In East, Central, and North-East Africa, where elephant, rhinoceros, and buffalo are almost certain to be met with, the double 8-bore should most certainly form part of the equipment. Some sportsmen even recommend the single 4-bore, a most formidable weapon, which may be almost absolutely relied upon to stop the charge of the heaviest and most dangerous game. As the weight of the 4-bore is very great—about 21 lbs.—and its recoil, backed by the huge spherical bullet and 12 drams of powder, proportionately heavy, only a man of the strongest physique and nerves is likely to employ so tremendous a fire-arm. For the rest, the battery recommended for South Africa will be found sufficient for other parts of the continent.

Hints on Shooting.—As regards the actual shooting of game, it may be said that only experience in the field can teach a man the knowledge of which he stands in need. Spoorers and native hunters may be relied upon to take the gunner up to the game he seeks: the rest of the business lies entirely with himself. In shooting lions, leopards, and other thin-skinned game at close quarters, the Express is a very deadly weapon. A broadside shot through the heart or lungs, or a chest shot, if the beast is facing the gunner, is pretty certain to kill or turn dangerous carnivora. The head shot for elephant, often resorted to in India, is seldom relied upon against the African elephant, and the point aimed at is the heart, or lungs. Rhinoceros are, as a rule, not difficult beasts to kill, and are often surprised and shot at close quarters; a shot from a 4-bore, 8-bore, or a ·577 solid bullet, through the lungs may be confidently relied upon to bring this gigantic beast to bag. In shooting heavy game, most beginners usually make the mistake of firing too high for the vital parts. The aim should be, if possible, directed just behind the point of the shoulder, a trifle below the middle of the body. It should always be remembered that for thick-skinned game, such as elephant, rhinoceros, buffalo, and giraffe, only *solid* bullets should be used.

It ought to be remembered that game laws now obtain in most parts of South Africa. In Cape Colony neither buffalo nor elephant, which are still found near the coast, can be shot without a permit from the governor. Zebra, koodoo, hartebeest, gemsbuck, bontebok, reedbuck, blesbuck, wildebeest and hippopotamus are similarly protected. Enactments for the preservation of the smaller antelopes vary in different districts and for different periods. These can be ascertained at the offices of the Agent-General for Cape Colony, Victoria Street, Westminster, or on landing at the Cape. In Natal the larger game is specially protected, as in Cape Colony. The close time for smaller antelopes extends from 30th June to 31st December. In the Orange Free State all game is protected from 1st September to 20th January. In the Transvaal the close season extends from 15th September to 1st February. Elephant and hippopotamus are absolutely protected. A licence to shoot giraffe, buffalo, rhinoceros, or ostrich costs £10; for zebra and large antelopes, £3; and for small antelopes, £1 10*s*. In the Bechuanaland Protectorate, including Khama's Country, and Ngamiland, there is a close season from 1st September to the end of February; in the Tati district from 1st October to 1st April. Special permission to shoot elephant, giraffe, or eland must be obtained from the British Resident for the Bechuanaland Protectorate. Hunting parties of five or under are required to pay a license of £75 to shoot large game; and £25 to all chiefs whose permission is required. Game may, however, be shot for food by travellers within a mile of the road. In the territory of the British South Africa Company there is a close season from 1st October to 1st March. But farmers may shoot game on cultivated land, and prospectors and travellers may shoot game actually required for food, if distant more than ten miles from a township. In Portuguese South-East Africa, strangers entering the country to hunt require a license which costs £50. Residents pay about £6 for a license to shoot big game. In Zululand, whites are not allowed to shoot game without a special permit. In Nyassaland a permit to shoot heavy

game costs £25, but it has now been decided to protect all game in the well known Elephant Marshes and for some time to come no shooting will be permitted in that area. Elephants are now protected in German East Africa. In Somaliland a reserve for elephants has been formed by the British authorities.

H. A. Bryden.

AMERICA, NORTH.—With the exception of British Columbia, the North American continent is, in spite of a few remaining districts where good sport may still be had, practically played out from the sportsman's point of view.

In British Columbia the sportsman must be prepared for downright hard work in a dense, rugged country. Here we shall find in far greater quantity than elsewhere every description of game common to the States, save the **Prong Buck**, to compensate for which we meet the true **Black Tail** deer, unknown in any part of America except along the Pacific coast.

Wherever we strike into the mountains, game of some description is nearly certain to be found. But the country is frequently so densely timbered, that little can be seen. Of well-known districts not yet exhausted, East Kootenay is the best and very easy of access. Here can be obtained in a three months' trip Caribou, White Tail, and Mule Deer; the Rocky Mountain Sheep; the Black and the Grizzly Bear; also the wretched Rocky Mountain Goat, which never can realise its danger. Here, too, lives one of the very few professional hunters of British Columbia. Every one must first gain his experience under a good hunter; and then, if he feel equal to it, let him start out northwards on his own account.

The **Woodland Caribou** (*Rangifer tarandus*), the female of which carries antlers, is distributed throughout British Columbia as far north as the head-waters of the Fraser River, where it gives place to the **Moose**. Further north, and inland, we come to the **Barren Ground Caribou** (*Rangifer grœnlandicus*).

Continuing still further north, we fall in with **Bison**; and finally meet the **Musk Ox**, which is only to be secured by some more than usually tough and enterprising sportsman. Those who hunt the **Woodland Caribou** should do so in the northern districts in September and November, for they shed their antlers remarkably early. They are very keen of scent and hearing, though, if the hunter succeeds in getting into a band of them, they appear to lose their heads and can be shot down right and left. They are also very locally distributed. [*See* Caribou.]

The mountains of the western side of the Kootenay Valley hold only Caribou and Mule Deer, while those on the east contain no Caribou at all, but plenty of Sheep, Goats, and Deer.

The **Wapiti** (*Cervus canadensis*), commonly known as **Elk** in America, is a magnificent deer formerly abundant in the States, but fast becoming scarce. At the present time, a specimen head is as likely to be procured in Wyoming as anywhere. The Wapiti is easily stalked and easily killed. It carries its antlers throughout the winter. There are a few examples in Kootenay and plenty on Vancouver's Island, but insular heads run small. [*See* Wapiti.]

The **Mule Deer** (*Cariacus macrotis*), known in America as **Black Tail** deer, is, after the Caribou, the most widely distributed and plentiful deer of British Columbia and the States. Its habitat in British Columbia extends on and off from the extreme south to Stuart's Lake in the north. Its antlers vary in formation and beauty considerably, and the hunter may always hope to kill yet a finer head than the last. Around Quesnell, on the Fraser, is a favourite locality. It is easily hunted and very plentiful in East Kootenay.

The **White-Tailed Deer** (*Cariacus virginianus*). These lovely little deer have, perhaps, the widest range of any deer in the world. They penetrate from the Atlantic to the Pacific, but do not extend far north in British Columbia. They are very abundant in East Kootenay, and are well worthy of all the hunter's skill, which in fair stalking will be taxed to the utmost.

The **Black-Tailed Deer** (*Cariacus columbianus*) are unknown save along the Pacific coast. They never wander far inland. From Vancouver into Alaska, many islands and the whole coast abound with them. They are easily approached.

The **Moose** (*Alces machlis*), known in Europe as the Elk, is the largest and most ungainly deer in the world, and one hideous head should suffice to satisfy most hunters. They are not difficult to obtain either in Canada or a district north-west of Winnipeg, but a whole season given up to their pursuit would be wasted, so far as the prospect of obtaining other game is concerned.

The **Bighorn**, or **Rocky Mountain Sheep**—[*See* Bighorn].

The **Prong Buck** (*Antilocapra americana*) is exclusively confined to the southern prairies, and even there its numbers are rapidly decreasing. It is hunted with dogs, but affords good stalking and requires straight shooting. It has the peculiarity of shedding its horns about October.

The **Rocky Mountain Goat** (*Haploceros montanus*).—Throughout British Columbia comparatively few mountains are without these tame, foolish creatures which afford no sport save the risk of a broken neck. The hunter has only to discover one to secure it, and by the time he has butchered the first, he will probably consider a second not worth climbing after.

Hints on the Trip—Unless the sportsman is content to risk entire failure, or only possible success in some unknown district, he should,

before leaving home, obtain information as to the latest discovery of a good locality for sport, and then secure a reliable hunter. All else is plain sailing.

The best route to British Columbia is *via* New York, and on to Montreal and westward by the Canadian Pacific Railway.

Little game exists east of the Rocky Mountains. If a good hunter be secured, the sportsman need not trouble himself about anything save rifles and clothing. All can be obtained with the hunter's assistance at the last town or Hudson's Bay port, where the hunter should be in waiting.

Expenses, &c.—The cost of a three-months' trip would be, for a hunter £2 per day, to include horses and outfit, and cook £10 per month; in addition to these a suitable supply of cheap provisions, such as flour, rice, canned milk, coffee, sugar, salt, &c., must be taken.

Season—The sportsman should leave England about the 15th of August and must, if hunting in British Columbia, first procure a £10 license.

Shooting Memoranda—When stalking any animal on a mountain side, the hunter should circle round to leeward and get above it, especially when after Bighorn.

By taking up a position between the setting sun and an animal, it can be easily approached unseen. On coming suddenly upon game, should it not be too much scared, it is best to remain perfectly motionless, until it commences to feed, or looks away. The most timid deer will often pass within ten yards of a stationary person without suspicion. A wounded animal should not be followed immediately, but rather be given time to lie down and stiffen. It is advisable to hunt only early and late, resting, as do the animals, in the middle of the day. When upon the hunting-ground, shots should never be fired at winged game, or anything save good heads. The sportsman should learn to skin before going on a hunt, and do all such work himself if the trophies are to look their best. Skins should *not* be dried in the sun or before a fire; and plenty of neck skin must be left on the masks of deer. A good deerhound will find much game and seldom lose that which is even slightly wounded, but he must always be fastened to the belt. Careful bearings should be taken on leaving camp, and if the hunter be lost, there is no need for alarm; it is only the camp that is lost, for a man with a rifle should always be able to exist until he either find his camp or be found. Two shots fired rapidly are usually considered signals of distress. More than one hundred rifle cartridges are unnecessary, and they should never be lost sight of or given over to any official on the way out. It requires an especially strong box to resist the rough handling of porters; and great care should therefore be taken in packing rifles.

Requirements—A **Winchester** is the rifle of the country; it is good and cheap, and cartridges can always be obtained; but the most perfect and satisfactory weapon is a double ·500 hammerless ejecting Express.

If geese and ducks are likely to be met with *en route* to the hunting-ground, a **Paradox** is advisable; its possession likewise renders any mishap to the rifle of little consequence.

A revolver is useless.

The best way to carry a rifle is in a sling over the back.

As for the remaining requisites, ordinary winter clothing will be wanted; as well as about five pairs of common sand-shoes with thin rubber soles, which are the most comfortable and noiseless for climbing and stalking.

A strong leather belt with two knives, whetstone, and compass, as well as a good pair of field-glasses, are necessary. An excellent skinning and hunting-knife is made, the handle of which closes on the blade; the latter fits neatly into a sheath. A second knife should be carried, commonly known as a shoemaker's knife, the blade of which has an upward turn; it takes a rough edge, and is excellent and quick for skinning. A roll valise is very handy for sleeping upon and carrying blankets, &c. The sportsman should be careful not to burthen himself with more than he absolutely requires, and that is very little. [*See also* CAMPING OUT.] A fishing-rod and large trout flies will often come in handy.

J. TURNER TURNER.

INDIAN—India affords as large a variety of animals for the rifle as any country in the world. Some of them are not met with elsewhere. Tiger, Panther or Leopard, Bear, the Gaur (always called in India Bison), Buffalo, Samber, Swamp Deer, Cheetul, Hog Deer, Barking Deer, Nilgai, Black Buck, Gazelle, Four-horned Antelope, Neilgherry Wild Goat (called in India Neilgherry Ibex), Rhinoceros, and Elephant, are the principal animals in India. In the Himalayan ranges, there are the Markhor, Ibex, Serow, Tahr, Gooral, Shapoo or Oorial, Burrel, Snow Leopard, Musk Deer, Brown and Himalayan Black Bear, and Cashmere Stag. In the hills to the west of Sinde, are a wild goat (*Capra ægagrus*), the same animal that is found in Crete and the Caucasus (it is known to Indian sportsmen as the Sinde Ibex), and a variety of the Markhor with a straight horn having a spiral twist. The Striped Hyæna, Wolf, Indian Wild Dog, Cheetah or Hunting Leopard, the Lion, Lynx, Wild Ass, and Wild Boar complete the list of what are usually styled the "big game" of India, though, to the old shikari, the smaller deer and antelopes are not reckoned as such.

The Indian **Lion** is now represented only by a few animals in Kathywar. They are very properly preserved and not shot, except occa-

sionally by some one specially privileged to do so. The writer sees no difference between the Indian and the African Lion and believes them to be identical. **Tigers, Panthers,** and **Bears** are found throughout India, generally speaking, though there are many thousands of square miles without any, and a stranger to the country, unless he has information as to the exact localities and the assistance of some experienced friend, could easily spend months without seeing a single example. All the large mountain ranges of the Indian Peninsula hold the Indian **Bison**: the Satpoora and Vindhyan ranges, the Mysore and Travancore Hills are the best. The **Buffalo** is found only in Assam, parts of Bengal, and certain limited portions of the Raepore, Sambalpore, and Chanda districts of the Central Provinces. **Samber, Cheetul, Swamp Deer,** and **Hog Deer** are jungle deer, the two former being found in suitable localities throughout India. The range of the **Swamp Deer** is more limited, its principal habitat being in the heavy grass and forest land in Assam and the foot of the Himalayas. It occurs also in the Mundla, Raepore, and Sambalpore districts of the Central Provinces. The **Hog Deer** is found in Sinde, Assam, and Northern India: but does *not* extend, as stated by Jerdon, into Central India. The **Barking Deer** is also a jungle deer, and is found throughout India. Of the Antelopes, the **Black Buck** lives in the plains; the **Nilgai** in the jungles and also in the open country; the **Four-horned** Antelope in the jungles; the **Gazelle** in the jungles and in open ground. The Neilgherry **Ibex** only occurs in the Madras Presidency, in the Neilgherry and Annamallay Hills, and in Travancore. The only other member of the same genus (*Hemitragus*) is the **Tahr** or Himalayan Wild Goat. The **Elephant** is still numerous in Travancore and Mysore, and in the large forests at the foot of the Himalayas. It is not now found in Central India. Shooting Elephants is prohibited in British territory. In the native states of Travancore and Mysore, also, they cannot be shot without permission from the State. There are two kinds of **Rhinoceros**, the larger and lesser. The former occurs in the Terai and Assam, and the latter in the Bengal Sunderbunds. The **Wild Ass** is only found on the Rann of Cutch, and is not shot. The **Hyæna** is also not an object of sport, and is common. The **Wolf** and **Wild Dog** are not uncommon, and are found throughout the country; the former generally in the open country; the latter do not leave the jungles. The **Hunting-Leopard** is not often met with when out shooting. Some of the native Rajahs keep them for coursing Black Buck. [*See* CHEETAH.] The **Lynx** is also seldom seen. Jerdon states that it is unknown in the Himalayas and in Bengal. That it occurs in Sinde is certain, as one was pulled down there by a couple of greyhounds belonging to a friend of the writer. The **Wild Boar** is found throughout India. In all suitable localities it is killed with the spear only.

The best season for Tiger, Panther, and Bear-shooting in Western and Central India is March, April, and May; after the monsoon breaks, usually the second week in June, nothing can be done. The jungles are then very feverish till about the end of November. In December, January, and February, which are the best months in the writer's opinion for stalking Deer, the jungle is too thick and the water too plentiful for much to be done with the *felidæ*, though some can, no doubt, be procured at that season. Bison and Buffalo-stalking on foot, which is the only sportsmanlike way of attacking these animals, is best followed in April and May, and for three weeks, or a month, after the rains commence. In Northern India, where the long grass necessitates the use of elephants, the shooting is generally done in the hot weather, March to June. In Southern India, on the other hand, the feverish time in the hills is the hot weather, and October and November are safe, although much discomfort is experienced from the rain. In the hot weather the stags have mostly shed their horns, and about Christmas is the time to stalk them. In the Central Provinces, rules have been framed which establish a close-time for Deer, and this includes the hot weather. A copy of such rules should be obtained from the Secretary to the Chief Commissioner Central Provinces by all who wish to shoot in the Central Provinces. Large tracts of country, forest reserves, are also closed to the sportsmen in the Central Provinces; and in other parts also it is necessary to obtain permission from the forest officer in charge to enter the jungles for shooting.

For big game shooting it is necessary to have one horse at least, and it is better to have two for each gun. As in the hot weather it is much cooler in the open air than in a tent, an 80 lb. Cabul tent for each sportsman is sufficient: this will keep things dry in case of the rain and heavy thunderstorms that sometimes occur at this season. A double-barrelled ·500 Express rifle is all that is necessary, but for a battery, the writer recommends two ·500 Express rifles, an 8-bore gun built for ball (not a rifle: a gun is as good and not so heavy) and a 12-bore gun. Bullock-carts can be hired by the month at about 12 annas a day. Beaters' pay varies in different places, from 2 to 4 annas a day. It is usual to give *double* pay if a tiger is killed. The shikaris' pay is from 4 to 8 annas a day. The rewards given by Government for tigers, &c., killed, should be distributed among the shikaris and men. (The Indian rupee equals 16 annas, and at the present rate of exchange is equal to about 14 pence.)

J. D. INVERARITY.

MEASUREMENTS—Probably no subject has given rise to more controversy than the measurements of animals which, in hunters' parlance, are classed as "Big Game," and of trophies of the chase. The reason for this is not far to seek; for the question is dominated by that exceedingly elastic quantity, the "personal equation." Sportsmen, generally, are not too exact in their methods of calculating size or weight, and this inexactitude may arise, not so much from pardonable anxiety to secure a trophy whose weight, length, or girth will rival or exceed that of any other particular trophy, as from the difficulties which attend the exact mensuration of animals killed in situations such as confront the adventurous hunter all the world over. Nevertheless, the means to greater exactitude in measurement are simple in the extreme, and may be summed up by saying that with a five-foot rule, a two-foot rule—some part of it divided into millimetres—a tape-measure of any length over ten feet, a large pair of calipers, and a note-book and pencil, one ought to be able to achieve absolute accuracy.

At present, few of the tables of measurements found in books of sport detail the methods adopted. Some sportsmen measure along all the curves of a carcase (even pressing the tape into inequalities), whilst others measure in a straight line. Obviously, the difference between the two

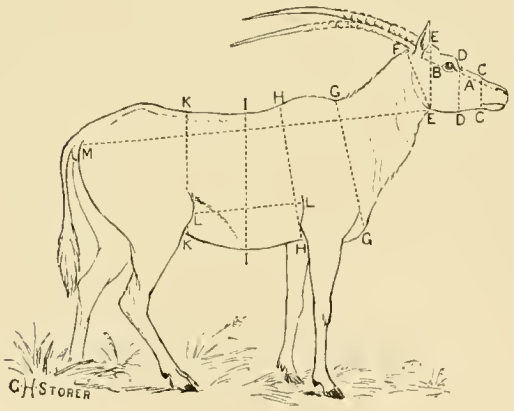


FIG. 1.

methods sometimes amounts to feet—a serious matter when the measurements of two animals, each taken by a different method, are compared, and therefore the method adopted should in all cases be stated: otherwise, confusion worse confounded arises when it is sought to institute comparisons.

Perhaps an indication of what the present writer considers a proper method of measurement may be acceptable to sportsmen generally. For ordinary mammals the method should be to measure, as shown in the diagram, Fig. 1, which is that of the Sabre-horned Antelope (*Oryx leucoryx*).

In a direct line along back from tip of nose to end of tail.

The same along under surface from end of lower jaw to end of tail.

Length of tail, measured underneath from anus to tip, the deduction of which gives the length of body above and below.

Length along top of head, following all curves from nose to just behind and between ears.

Length from proximal angle of nostril to distal angle of eyelid on dotted line A.

Length between distal and proximal angles of eyelids.

Length from proximal angle of eyelid to insertion of ear on dotted line B.

Breadth of head between eyes.

Breadth between ears.

Length and breadth of ears.

Girth around muzzle at proximal angle of jaws (C, C).

Girth around muzzle in front of eyes (D, D).

Girth around head, under throat, in front of ears (E, E).

Girth of neck behind ears (E, F).

Girth of neck in front of shoulders (G, G).

Length of neck, on upper surface, from back of ears to distal edge of shoulder (F, G). Also, on under surface, from throat (E) to point G.

Girth of body just behind fore limbs (H. H).

Girth at greatest depth of abdomen (I, I).

Girth just in front of hind limbs (K, K).

Length of body between posterior edge of fore, and anterior edge of hind limbs.

Extreme length along *side* from throat (E) to below spring of tail (M).

Extreme height from ground to shoulder or withers.

Extreme height from ground to above hip.

Length of limbs as separate items where practicable.

Girth of limbs in three places: at foot, "knee," and junction with body.

Note colours of muzzle, eyes, and all soft parts, and also any peculiarities.

The weight, if possible, to be recorded, and in many cases this may be calculated by the method detailed in certain works for ascertaining the weight of cattle.

Place and date in all cases to be given.

If a horned head, the position of horns in relation to the muzzle, eyes, and ears should be noted, and the width on top of head between their insertions.

The antlers of such an animal as a stag should be measured as shown in the diagram, Fig. 2, drawn from the horns of a Wapiti (often misnamed "Elk").

Length of beam of each antler, following all curves along back of beam to tip of highest posterior tine (see dotted line A).

Length in a straight line from burr to tip of same tine (see dotted line B).

Length along centre of beam to crown.

Distance from burr to spring of first or "brow-" tine.

Length of brow-tine along under surface.

Distance between brow-tine and next or "bez-" tine.

Length of bez-tine.

Distance between bez- and "tres-" tines.

Length of tres-tine; and so on, measuring length of each successive tine, and distance from

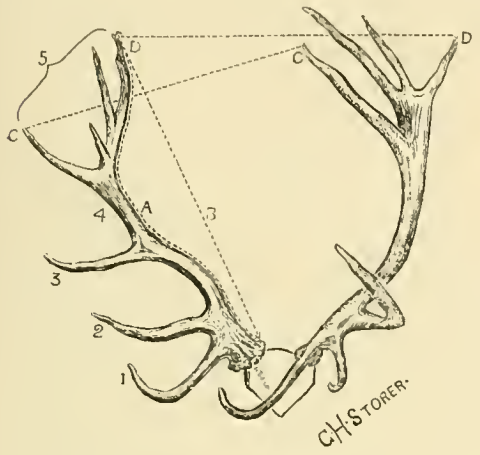


FIG. 2.—ANTLERS OF AN ELAPHINE DEER.

1. Brow-tine. 2. Bez-tine. 3. Tres-tine. 4. Royal-tine. 5. Sur-royals.

this to next. Also note if any anterior sur-royal makes, with the beam, a greater length than that along the dotted line A.

Span between burrs.

Span between tips of brow-tines.

Span between tips of bez-tines.

Span between tips of tres-tines.

Span between tips of anterior sur-royals on dotted line C, C.

Span between tips of posterior sur-royals on dotted line D, D.

Greatest span at crown.

Girth of beam at burr.

Girth between brow- and bez-tines.

Girth between bez- and tres-tines.

Girth between other tines.

The length and girth of any other noticeable tines should also be taken.

It should be noted that the apparent beam above the tres is the "royal tine," and that all points springing therefrom are called sur-royals, anterior and posterior, and often form a cup—the "throstle's nest" of the Scot. Six points on each antler constitute a "royal head." In horns of other than Elaphine deer there is no bez-tine, and the next anterior one above the brow-tine is, therefore, the tres—(sometimes, although erroneously, called the "royal").

The diagram, Fig. 3, shows the different types of antlers, for all of which, except the last, the foregoing method of measurement must be modified.

Twisted horns such as those of the Antelopes and of various sheep should be measured along their front, back and side curves in the manner described by Sir Victor Brooke and other authors, together with girths and distances between the various points.

The length, width and girth of the skull at various points is desirable.

The following tables of Big Game measurements have been compiled from various works, but, as will be observed, in scarcely any case is the exact method indicated, and therefore those measurements for which the writer is not responsible must be taken on their merits. Probably no *skin*-measurements are of the slightest avail, skins being stretched out of all proportion in the process of pegging-out and drying.

In an article like the present, which is necessarily limited, it will be readily understood that not a tithe of the measurements to be found in books of sport, travel or reference can be given, nor, indeed, can all the animals known as beasts of chase be even mentioned, this omission being particularly noticeable in the great order of the *Ungulata*, or hoofed animals. The reader is referred, therefore, to the various works by Anderson, Baillie-Grohman, Baker, Blanford, Sir Victor Brooke, Buxton, Caton, Chapman, Gordon-Cumming, Danford and Alston, Dodge, Jules Gerard, Harris, Jerdon, Littledale, Lord, Lydekker, Lord Mayo, Peek, Percy, Clive

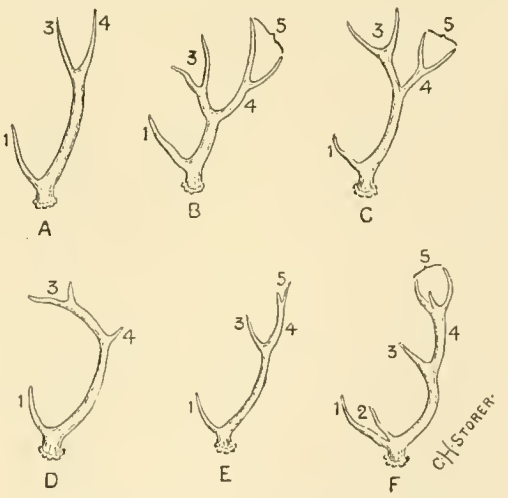


FIG. 3.—TYPES OF ANTLERS (modified from P.Z.S.).

A. Rusine type.
B. Normal Rucervine type.
C. Intermediate Rucervine type.
D. Extreme Rucervine type.
E. Sub-Elaphine type.
F. Elaphine type.

Phillipps-Wolley, Pike, Roosevelt, Sanderson, Sclater, Selous, Sterndale, Ward, Williamson, and a host of others, pre-eminent amongst which, for wealth of measurements, stands out

Rowland Ward's *Horn Measurements and Weights of the Great Game of the World*, which contains nearly all records prior to 1892.

Carnivora.

Taking the mammals from highest to lowest form, the Lion heads the list, and although sportsmen imagine specific differences to exist between the African and Asiatic Lion, and between those of various parts of Africa, nevertheless, maned or unmaned, small or large, ruddy or pale, these are but slight or local variations, and there is really only one species.

Lion (*Felis leo*)—Sir Samuel Baker appeared to consider that Lions of 500 to 600 lbs. were by no means uncommon, but the heaviest as yet recorded is one, mentioned by Mr. Lydekker in the recently published *Royal Natural History* as having been shot in the Orange Free State in 1865, which is stated to have weighed 583 lbs. The next in weight is one recorded in *The Field* of July 13, 1890, weighing 563 lbs. A fine, black-maned menagerie Lion, of abnormal size, is stated to have weighed 434 lbs., its length from nose to root of tail being 6 ft. 10 in., tail 3 ft. 2 in., girth behind shoulder 4 ft. 9 in., girth of upper arm 1 ft. 10 in., and height at shoulder 3 ft. 6 in. Selous mentions three, of the respective weights of 410 lbs., 385 lbs., and 376 lbs.; the extreme length of the largest was 9 ft. 11 in., and standing height to top of shoulder-blade 3 ft. 8 in. Indian Lions are generally the smaller, but Sterndale gives two of the total lengths of 9 ft. 6 in. and 8 ft. 6 in. respectively, the tails of which measured 3 ft. and 2 ft. 6 in., and their height at shoulder 3 ft. 6 in.

Tiger (*Felis tigris*)—In the very valuable tables given in *Big Game Shooting* and by Mr. Rowland Ward, the greatest length is 12 ft. 2 in., but this was probably that of a skin, as the largest Tiger as yet recorded only attained the length of 10 ft. 2½ in. before skinning. This, which was shot by the Maharajah of Kuch Behar, was of the extreme weight of 540 lbs. Others shot by him weighed 493 lbs., 467 lbs., 455 lbs., 450 lbs., and 445 lbs., and ranged in length from 10 ft. 2½ in. to 9 ft. 6 in. Probably the average weight of a large Tiger may be taken as between 400 and 450 lbs., and its length as between 9 ft. 6 in. and 10 ft., including the tail of about 3 ft. The height at shoulder would be from 3 ft. 6 in. to 3 ft. 8 in. Sanderson, however, in his *Among the Wild Beasts of India*, mentions that a very bulky, old, well-fed, powerful Tiger was but 9 ft. in length, and weighed only 349½ lbs. The Tigress, as the Lioness, is of less length and of considerably less weight. Tiger cubs of one year old are from 4 ft. 6 in. to 5 ft. 6 in. in length, but at the age of three years attain a length of from 7 ft. to 8 ft. 6 in.

Leopard (or **Panther**) (*Felis pardus*)—Sportsmen, as with the Lion, attempt to differentiate between the Leopard and the Panther, and, indeed, contend for specific differences. The Leopard or Panther of Africa and India are, however, not specifically distinct, although they vary greatly both in size and colour, even to melanism, and, more rarely, albinism. Sanderson, who regards them as varieties, but yet gives each a specific name, says: "The Panther varies in size from 6 ft. to 8 ft. from nose to tip of tail," whilst "the Leopard varies greatly in size, but probably never exceeds 6 ft. in length." Danford and Alston in *Proc. Zool. Soc.*, 1880, record one whose total length was 8 ft., viz., 4 ft. 11 in. length of head and body, and 3 ft. 1 in. of tail, whilst its height at shoulder was 2 ft. 2 in. Of another, however, mentioned in *Cassell's Natural History* as 7 ft. 6 in. in length, the height at shoulder is given as 2 ft. 7 in. Other measurements are given on the authority of Gordon-Cumming and of Captain Fergusson, as being 7 ft. 10 in. and 7 ft. 8 in. respectively. Unfortunately, no other measurements nor any weights are to hand.

Snow-Leopard (or **Ounce**) (*Felis uncia*)—This, the great prize of the Indian sportsman, is given as ranging from 7 ft. 4 in. to 6 ft. in length, from which an average length of 3 ft. must be deducted for the tail. The height at shoulder is given by Sterndale as 2 ft.

Jaguar (*Felis onca*)—This South American cat, locally known as the "Tiger," is stated by Mr. Lydekker (*op. cit.*) to have attained a length of 5 ft. from tip of nose to root of tail; and another, measured by Azara, attained a length of 6 ft. 9 in., from which 2 ft. 2 in., for length of tail, must be deducted; the average, however, may be taken as 6 ft. 2 in., including the tail of 2 ft. 1 in.

Puma (or **Cougar**) (*Felis concolor*)—Another South American cat—locally called the "Lion"—is stated in *Big Game Shooting*, vol. i., to have attained a length of 8 ft. 2 in. including the tail, of about 3 ft. Weight about 150 lbs. A large male, killed in Arizona, says Mr. Lydekker, measured 7 ft., including tail 3 ft.

Clouded Leopard (or **Clouded Tiger**) (*Felis nebulosa*)—This Asiatic cat is stated by Jerdon to grow to a large size, and Mr. Lydekker records one of 6 ft. 6 in. Sterndale gives another whose length was 6 ft. 4 in., including the tail of 3 ft. Mr. Lydekker gives another—a male—which measured 5 ft. 7½ in., including the tail of 2 ft. 6 in.

There are many smaller cats known to science which cannot be included here.

Lynx (*Felis lynx*)—Apparently the European and Asiatic Lynx, although so variable in size and coloration, are to be considered as of one species only. Blanford gives the body length as 2 ft. 9 in., and tail 7¾ in.; probably, how-

ever, larger specimens than this are found. *Cassell's Natural History* mentions their length as from 3 ft. 4 in. to 4 ft. 2 in., exclusive of tail 6 in. to 9 in., but these may be skin-measurements.

Canada Lynx (*Felis canadensis*)—Mivart gives this as not exceeding 2 ft. 6 in. in length from snout to root of tail, which is 5 in., but in the *Museum of Natural History* one is recorded as 3 ft., with $4\frac{1}{2}$ in.

Hunting Leopard (or **Cheetah**) (*Cynælurus jubatus*)—Jerdon states that an adult attains a length of 7 ft., of which the tail comprises

Snow Leopard.

Average height at shoulder, 2 ft. Average length from head to root of tail, 3 ft. 8 in.

2 ft. 6 in. The height at shoulder is given as from 2 ft. 6 in. to 2 ft. 9 in.

Striped Hyæna (*Hyæna striata*)—Sterndale gives the measurements of one as—Length of head and body 3 ft. 6 in., tail about 1 ft. 6 in.

Brown Hyæna (*Hyæna brunnea*)—*Cassell's Natural History* mentions a specimen as having a length of 4 ft. 10 in., including tail of about 1 ft., and a height at shoulder of 1 ft. 4 in.

Spotted Hyæna (*Hyæna crocuta*)—In the same work, measurements of one are given as—extreme length 5 ft. 10 in.: height at shoulder 2 ft. 8 in.

Wolf (*Canis lupus*)—Whether the Indian Wolf (*Canis pallipes*) is to be considered as specifically distinct from *C. lupus*, it is certain that both the European and American Wolf are to be regarded as one species, and this in spite of the extreme variability of their coloration. Sterndale gives the length as 5 ft. 2 in. to 5 ft. 8 in., including the tail of 1 ft. 8 in. Cassell gives height at shoulder as 2 ft. 8 in.

There are several of the smaller Cynoidea which need not be included here.

Polar Bear (*Ursus maritimus*)—The weight has been variously estimated as from 600 to 700 lbs. (see *Royal Natural History*, vol. ii.), and as 1,500 lbs. (see *Big Game Shooting*, vol. i.), and its length, from snout to tail, as from 8 ft. to 9 ft. 6in.

Brown Bear (*Ursus arctos*)—No exact measurements appear to have been recorded of large European specimens, but it is believed that they sometimes attain a length of fully 8 ft. from nose to root of tail. In the Himalayas, the average length is 5 ft. or 5 ft. 6 in., although examples of 7 ft. are met with, and the length of one has been recorded as 7 ft. 6 in., whose height was 3 ft. 5 in. The tail does not exceed 2 in. or 3 in.

Isabelline Bear (*Ursus isabellinus*)—Major Fitz Herbert appears to have met with a male specimen measuring 5 ft. 5 in. from nose to tail; height at shoulder, 3 ft.; girth, 4 ft.; forearm, 1 ft. 5 in.; and a female whose extreme length was 4 ft. 9 in. According to Major Ward, the length of another specimen was 6 ft. 10 in.

Grizzly Bear (*Ursus horribilis*)—Messrs. Lewis and Clark measured a specimen which had attained a length of 9 ft. J. C. Tolman gives the dead weight of one as 1,656 lbs., and measurements of fresh skin as follows: Length from nose to anus, 13 ft. 6 in.; from ear to ear,

1 ft. 1 in.; poll to nose, 1 ft. 8 in.; length of hind foot, 1 ft. 6 in.; breadth of forefoot, 1 ft. The weight of a female is given as 900 lbs.

American Black Bear (*Ursus americanus*)—Adult male specimens frequently weigh from 600 to 700 lbs., whilst their length rarely exceeds 5 ft., and their average height is 3 ft.

Himalayan Black Bear (*Ursus torquatus*)—The average length from nose to root of tail is given as 4 ft. 9 in. to 5 ft. 6 in., although one is recorded, on the authority of Major Ward, as measuring 6 ft. 6 in.

Malayan Bear (*Ursus malayanus*)—Average length of head and body, 4 ft.; never exceeds 4 ft. 6 in. Length of adult female recorded as 3 ft. 6 in.; weight, 60 lbs.

Sloth Bear (*Melursus labiatus*)—Length of head and body varies from 4 ft. 6 in. to 5 ft. 8 in.; tail, exclusive of hair, 4 in. to 5 in.; height at shoulder, 2 ft. 2 in. to 2 ft. 9 in. Average weight of large males probably 280 lbs., although the weight of one has been recorded as 320 lbs.

Southern Sea-Lion (*Otaria jubata*)—Sometimes called Captain Cook's Sea-Lion, and

WALRUS.

Average length from snout to root of tail, 10 ft. Average length of tusks (male), 1 ft. 9 in.

stated by him to have attained, in his day, a length of 12 ft. or 14 ft., and a girth of from 8 ft. to 10 ft., but males are now said to attain a length of only 7 ft. from tip of muzzle to root of tail.

Northern Sea-Lion (*Otaria stellari*)—Adult males vary in length from 11 ft. to 13 ft., including the tail of 3 in. to 4 in., girth from 8 ft. to 10 ft.; estimated weight, 1,000 to 1,300 lbs.

Northern Sea-Bear (or **Fur-Seal**) (*Otaria ursina*)—The extreme length of adult males is given as 7 ft. to 8 ft.; girth, 6 ft. to 7 ft.; estimated weight, 700 to 800 lbs. Females: Length, 4 ft.; girth, 2 ft. 6 in.; weight, 80 to 100 lbs.

South American Fur-Seal (*Otaria australis*)—The average length of male specimens is said to be 6 ft. to 7 ft., that of females 5 ft.

Walrus (*Trichechus rosmarus*)—Adult males appear to range in length from 9 ft. 6 in. to upwards of 12 ft. from snout to root of tail, but Elliot mentions one from the Behring Sea whose length was 13 ft. and girth 14 ft., whilst their weight is variously estimated at from 2,250 to 3,000 lbs. and even more. Tusks have been recorded of a total length of 2 ft. 7 in. and a weight exceeding 8 lbs. each; such examples are, however, exceptional, tusks of 4 lbs. weight and 2 ft. in extreme length being considered very fine. Tusks of females rarely exceed 1 ft. 8 in.

There are many others of this group—the Carnivora pinnipedia—of which mention is here unnecessary.

UNGULATA.

Aurochs (*Bos taurus*)—No small confusion appears to exist in the nomenclature of European wild oxen. The Aurochs, which, in a sub-fossil condition, is known to palæontology as *Bos taurus* var. *primigenus*, is now only represented by the half-wild Chillingham and other park cattle, and by our domestic breeds descended therefrom. That which sportsmen term the "Aurochs" is really the European Bison (*Bos bonasus*).

The horn measurements of a Chillingham Bull are stated to be—Length 1 ft. 6½ in.; girth 10⅝ in.; span at tips 1 ft. 8 in.; width inside 1 ft. 9⅛ in.

Indian Humped Cattle (*Bos indicus*)—Semi-wild in some parts of India, and the Galla Ox of Africa may not be specifically distinct.

Gaur (*Bos gaurus*)—Known to Indian sportsmen by the incorrect designation of "Bison," this is stated to attain a height of 6 ft. 0 in. (18 hands) at the shoulders, and one is recorded by Sir Walter Elliot as measuring 6 ft. 1½ in. at shoulder, 5 ft. 3 in. at rump, 9 ft. 6½ in. in length from nose to root of tail, tail 2 ft. 10½ in., length of dorsal ridge 3 ft. 4 in., height of dorsal ridge 4½ in., muzzle to frontal ridge 2 ft. 1¾ in., breadth of forehead 1 ft. 3½ in., ear 10½ in., spread at tip of horns 2 ft. 1 in., girth of horns 1 ft. 7½ in. The longest horns recorded were 3 ft. 3 in., with a circumference of 1 ft. 7 in. The greatest circumference is 1 ft. 10 in. with a length of 2 ft. 8 in. The greatest spread at tips recorded is 3 ft. 1¾ in., with a length of 2 ft. 4⅝ in., circumference 1 ft. 3¾ in., and widest spread, inside, 3 ft. 4½ in.—which is also the maximum record.

Gayal (*Bos frontalis*)—Found genuinely wild in some parts of India, and smaller than its ally, the Gaur. Ward mentions two pairs of horns measuring respectively 1 ft. 3 in. and 1 ft. 0⅝ in. in length, 11½ in. and 1 ft. 1¼ in. in circumference, and 2 ft. 2⅜ in. and 2 ft. 3¾ in.

from tip to tip, but Blanford records that the horns of an old wild bull measured 1 ft. 2 in. both in girth and length.

Banting, or Javan Ox (*Bos sondaicus*)—Sometimes known as the Burmese Wild Ox. The maximum height recorded of an adult bull is 5 ft. 9½ in., at withers, whilst the longest pair of horns measured 2 ft. 0¾ in., with a girth of 1 ft. 0¼ in., spread at tips 1 ft. 3¾ in., and widest span, inside, 2 ft. 0¼ in. The greatest spread at tips, however, and the maximum span, are given as 1 ft. 6⅛ in. and 1 ft. 10⅛ respectively, combined with a length of 1 ft. 8⅝ in. and a girth of 1 ft. 0¼ in.

Yak (*Bos grunniens*)—The adult bull is said to weigh about 1,200 lbs., and to average 5 ft. 6 in. in height, but one is stated to be in the Leeds Museum measuring 6 ft. 0 in. in height at shoulder; 10 ft. 10½ in. in length of head and body; tail 3 ft. 1 in.; girth at shoulder 10 ft. 1 in.; girth at belly 9 ft. 4 in; at thinnest part of neck 4 ft. 2 in.; length of horns 3 ft. 0 in.; basal girth 1 ft. 6 in. This length of horns appears, however, to have been exceeded, one pair being said to measure 3 ft. 2¼ in., with a girth of 1 ft. 5 in., spread at tips 1 ft. 7 in., and widest inside span 2 ft. 7½ in., whilst these were exceeded in spread at tips by a pair of 2 ft. 10 in. horns which attained a spread of 1 ft. 8½ in.

European Bison (*Bos bonasus*)—Although truly wild in the Caucasus, and known as the Caucasian Bison, and semi-domesticated in Lithuania and known as the Lithuanian Bison, there is really no specific distinction.

Of a Caucasian bull the following measurements are given:—From nose to root of tail, 10 ft. 1 in.; top of hoof to top of withers, 5 ft. 11 in.; circumference of leg below knee, 10 in.; knee, 1 ft. 4 in.; below hock, 10½ in.; round hock, 1 ft. 7 in.; girth of body, about 8 ft. 4 in. The horns of a Lithuanian bull and cow are said to have measured respectively, from tip to tip, 1 ft. 6½ in. and 6 in.; base to tip around curve outside, 1 ft. 5½ in. and 1 ft. 3¼ in.; around curve inside, 1 ft. 1½ in. and 10 in.; circumference at base, 10 in. and 8 in.; across forehead, 1 ft. 1 in. and 10 in.

American Bison (*Bos americanus*)—Called "Buffalo" by one of those errors which seem to dog the footsteps of sportsmen in dealing with wild oxen, this is stated to have attained, in the bull, a length of 8 ft. 6 in. from tip of muzzle to root of tail and a height of 5 ft. 8 in. at withers. The weight of an adult bull has been recorded as 1,727 lbs., which is probably not exceptional, as another is said to have reached 2,000 lbs. Good-sized horns measure 1 ft. 4 in. to 1 ft. 6 in. in length, but one pair measured nearly 1 ft. 9 in., with girth 1 ft. 3 in.

Cape Buffalo (*Bos caffer*)—The following weights and measurements of different animals have been given by various authorities:—Length of body 9 ft. 0 in., tail 3 ft. 0 in. Height at shoulder 4 ft. 7 in. to 4 ft. 8 in. Weight 45 stone and upwards. Horns:—Extreme span at greatest width 3 ft. 8 in., depth on forehead 1 ft. 3 in., total length of each horn along curve 3 ft. 0 in. Besides these, the maximum measurements recorded, of various examples, are:—Width, inside, 3 ft. 6 in. Width, outside, 3 ft. 11 in. Tip to tip, 3 ft. 1⅛ in. Width of palm, 1 ft. 5 in.

Indian Buffalo (*Bos bubalus*)—The bull of this species, known as the "Arna," is said to have attained, in one instance, a length of 10 ft. 6 in. from nose to root of tail. In height it is supposed never to exceed 5 ft. 4 in. (16 hands) at withers, and actual measurements of one specimen are given thus:—Length, from nose to root of tail 9 ft. 7 in., tail 3 ft. 11 in., height 5 ft. 0 in., girth 8 ft. 3 in.; horns from tip to tip along greater curve, 8 ft. 3 in. The longest horn recorded—one in the British Museum—is accredited by one authority with a "length of 6 ft. 6½ in., which indicates a span of about 14 ft. from tip to tip in the pair," whilst another gives its length outside curve as 6 ft. 5⅜ in., and basal girth 1 ft. 5⅞ in.

Of other measurements of various horns, the maximum records are:—Girth 1 ft. 9 in. Spread at tips 4 ft. 7½ in., with greatest width, inside, 4 ft. 10 in.

Musk Ox (*Ovibos moschatus*)—The horns are said to average about 2 ft. or 2 ft. 1 in. in length, but examples have been recorded ranging up to 2 ft. 3¼ in., one pair of this length having breadth of palm 1 ft. 0½ in. and spread at tips 2 ft. 3 in. Maximum breadth of palm 1 ft. 1⅛ in. with a length of 2 ft. 2¼ in. Maximum spread at tips 2 ft. 6 in., with length 2 ft.

American Wild Sheep (*Ovis canadensis*)—Known as the "Bighorn." Average weight of rams, 350 lbs. or less; of ewes, about 233 lbs. Of an adult ram these dimensions have been recorded:—From base of neck to root of tail, 3 ft. 6 in.; girth under forelegs, 3 ft. 9 in.; height at shoulder, 3 ft. 2 in. Approximate height of ewes, 3 ft. Horns range in length from 2 ft. 8 in. to 3 ft. 5 in.—the maximum record, accompanying the maximum girth of 1 ft. 5¼ in. and spread at tips of 2 ft. 4 in.

Kamschatkan Wild Sheep (*Ovis nivicola*)—Closely allied to, and possibly not specifically distinct from the preceding, this sheep is said to attain an average height of about 3 ft. 4 in. at shoulder, the maximum height recorded being 3 ft. 5 in., combined with a length, from nose to tip of tail, of 5 ft. 5 in. The maximum length is 5 ft. 7 in., and the only record to hand of girth of chest is 4 ft. 6 in., with height 3 ft. 4 in. and length 5 ft. 6 in. Of another specimen, standing only 3 ft. 1 in. at shoulder, these additional measurements were made—Skull, from between horns to end of præ-

maxillæ, 10 in.; greatest width across orbits, $6\frac{3}{4}$ in. Horns, length round curve, 2 ft. 9 in.; circumference, 1 ft. $0\frac{3}{4}$ in. Maximum length of horns recorded, 3 ft. 2 in., with basal girth 1 ft. $1\frac{1}{2}$ in., and spread at tips 2 ft. 2 in. Maximum girth 1 ft. $2\frac{1}{2}$ in. Maximum spread at tips 2 ft. $2\frac{1}{2}$ in. Horns of adult female, 9 in. in length.

Mongolian and Tibetan Argalis (*Ovis ammon* and *O. hodgsoni*)—These animals, whose differences may be rather of variety than of species, are said to be comparable in size with a large donkey, but no actual weights or dimensions appear to have been recorded except the height of two specimens of *O. ammon*, which were respectively 3 ft. 10 in. and 3 ft. 7 in. at shoulder, and the length of skull of the latter—1 ft. The approximate height of the Tibetan ram is given as from 3 ft. 6 in. to 4 ft. at shoulder. Horns range in length from 1 ft. $8\frac{1}{4}$ to 4 ft. 1 in., in girth from $7\frac{3}{8}$ in. to 1 ft. 8 in., and in spread at tips from 1 ft. 2 in. to 2 ft. 8 in., but one pair has been accredited with a length of 4 ft. 5 in., and a girth of 2 ft. or 2 ft. 1 in.! Of ewes' horns, the maximum record is a length of 1 ft. 6 in., girth 7 in., spread 1 ft. $7\frac{3}{4}$ in., although they are supposed occasionally to attain a length of 2 ft. 0 in.

Pamir Wild Sheep (*Ovis poli*)—Known also as Marco Polo's Wild Sheep. The weight of an adult ram has been estimated at about 500 lbs. The height of one has been given as 3 ft. 10 in., and Mr. Blanford measured another whose length, from horns to root of tail, is given as 4 ft. $8\frac{1}{2}$ in., tail $5\frac{1}{2}$ in., height at withers 3 ft. 8 in., horns 4 ft. Of horns, the maximum length recorded is 6 ft. 3 in., with girth 1 ft. 4 in., and spread at tips 4 ft. $6\frac{1}{2}$ in.; and the greatest girth is 1 ft. $5\frac{3}{8}$ in., with length 4 ft. $11\frac{1}{2}$ in., and spread 3 ft. $9\frac{3}{8}$ in.; horns, however, with a length of 4 ft. 5 in. to 5 ft. are considered good specimens. Horns of ewes are small and upright.

Oorial, or Sha (*Ovis vignei*)—The typical form, found in the Punjab and known as the Oorial, has an average height of about 2 ft. 8 in. at shoulder, whilst a variety, found in Ladak and called the Sha, attains a height of 3 ft. or upwards. Maximum length of horns 3 ft. $2\frac{5}{8}$ in., combined with maximum girth of 1 ft. $0\frac{1}{4}$ in., and spread at tips $11\frac{1}{4}$ in. The greatest spread—1 ft. $11\frac{1}{2}$ in.—accompanied a length of 2 ft. $2\frac{1}{2}$ in. and girth of $9\frac{1}{2}$ in. Horns of ewes are short and nearly straight.

Armenian Sheep (*Ovis gmelini*)—Height at withers, usually about 2 ft. 9 in. The British Museum possesses an extremely large head, with horns said to measure 3 ft. $6\frac{1}{4}$ in. along curve of fronto-nuchal edge; $10\frac{1}{2}$ in. in basal circumference; and $5\frac{1}{2}$ in.—the smallest record—in spread at tips. Other horns have been recorded as measuring 3 ft. $0\frac{1}{4}$ in., 2 ft. $6\frac{1}{2}$ in., and 2 ft. $5\frac{5}{8}$ in. in length; 2 ft. 2 in. is, however, a very good length. Maximum circumference given, $10\frac{5}{8}$ in. Maximum spread, 1 ft. 9 in.

Cyprian Sheep (*Ovis ophion*)—Of this form, which may be but a variety of the preceding and not a distinct species, the ram barely exceeds 2 ft. 2 in. in height at withers, whilst, of the few horns noted, the maximum length is 2 ft., with a girth of 8 in. and a spread of $4\frac{1}{2}$ in. or less. Other lengths range down to 1 ft. $10\frac{1}{4}$ in. Greatest spread, 1 ft. $0\frac{3}{4}$ in.

Mouflon (*Ovis musimon*)—The dimensions of a living male, formerly in the Zoological Gardens of London, were recorded as 3 ft. 3 in. from nose to tail; tail 5 in.; from nose to base of horn 7 in.; ears 4 in.; neck, from posterior base of horn to abrupt angle of insertion, 8 in.; thence to base of tail 1 ft. 9 in.; height at shoulder 2 ft. 3 in. Horns range in length from 1 ft. 8 in. to 2 ft. 4 in. or 2 ft. 5 in., with a girth of 7 in. to 9 in., and a spread at tips of $5\frac{1}{8}$ in. to 1 ft.

Bharal (*Ovis nahura*)—Approximate height of ram, 3 ft. at withers; ewe, altogether smaller. Horns measuring 2 ft. along curve, and about 11 in. in girth are considered good, but examples have been recorded ranging in length to 2 ft. 8 in.; in girth to 1 ft. $0\frac{3}{8}$ in., and in spead at tips to 2 ft. $2\frac{1}{8}$.

Barbary Sheep (*Ovis tragelaphus*)—Height 3 ft. or rather more. Horns—of both males and females,—which, although finely wrinkled in the young animal are almost smooth in the adult, range in length from 1 ft. 4 in. to 2 ft. $2\frac{3}{8}$ in.; in basal girth from $7\frac{1}{2}$ in. to $10\frac{3}{4}$ in., and in spread at tips from 5 in. to 1 ft. $6\frac{1}{2}$ in.

Pallas's Tur (*Capra cylindricornis*)—This wild Goat of the Eastern Caucasus, known also as the Caucasian "Burhel," is said to stand about 3 ft. in height at shoulder. Horns measuring 2 ft. 7 in. along curve are considered good, although specimens have been recorded ranging in length up to 3 ft. $2\frac{1}{4}$ in. with girth 1 ft. $0\frac{1}{2}$ in. The greatest girth, 1 ft. 3 in., accompanied a length of 3 ft. Greatest span at tips 1 ft. $7\frac{3}{4}$ in., with length 2 ft. $9\frac{3}{8}$ in., and girth 1 ft.

Caucasian Tur (*Capra caucasica*)—Inhabiting the Central Caucasus, and known locally as the Ibex," yet doubtfully of a distinct species from the preceding. Horns have been recorded ranging in length from 9 in. to 3 ft. $4\frac{1}{8}$ in., the latter being combined with the maximum girth—1 ft. $0\frac{5}{8}$ in.—and a spread at tips of 1 ft. $3\frac{1}{4}$ in. The greatest spread—2 ft. $3\frac{5}{8}$ in.—was found in a pair of horns 3 ft. $0\frac{7}{8}$ in. in length.

Spanish Wild Goat (*Capra pyrenaica*)—Erroneously called an "Ibex," being more nearly related to the Turs. Said to stand about 2 ft. 2 in. in height at shoulder. Good-sized horns measure about 2 ft. in length, but specimens have been recorded ranging up to 2 ft.

7 in., this length being combined with the maximum spread of 2 ft. $2\frac{1}{2}$ in., and a girth of only $8\frac{3}{4}$ in. Maximum girth recorded $10\frac{3}{8}$ in., with length 2 ft. $3\frac{1}{2}$ in. and spread 1 ft. $7\frac{1}{2}$ in.

Persian Wild Goat (*Capra ægagrus*)—This species, termed the Pasang (*i.e.* rock-footed) by the Persians, is said to be the chief ancestor of the different breeds of domestic goats. The height of an adult male is given as 3 ft. 1 in. at shoulder. Of horns, a length of 3 ft. 4 in. along curve is considered good, although one pair of 4 ft. 5 in. has been recorded. The maximum girth—$9\frac{3}{4}$ in.—accompanied a length of 2 ft. $9\frac{5}{8}$ in., and a span of 1 ft. $2\frac{1}{2}$ in.. this span being exceeded by a pair measuring 3 ft. $3\frac{7}{8}$ in. in length, $7\frac{7}{8}$ in. in girth, and 2 ft. 3 in. from tip to tip. The *smallest* span at tips is $1\frac{1}{4}$ in., in horns of the same length as the last.

Alpine Ibex (*Capra ibex*)—The Ibex, Steinbok, or Bouquetin has now disappeared as a truly wild animal, it is therefore a matter for concern that no weights nor body-measurements appear to have been ascertained, and but four horn-measurements are to hand. One pair in the British Museum are said to measure 3 ft. $7\frac{3}{4}$ in. in length, and Mr. Rowland Ward records three as measuring respectively 2 ft. $7\frac{3}{4}$ in., 2 ft. $2\frac{3}{4}$, and 1 ft. $9\frac{1}{2}$ in. in length; $9\frac{1}{8}$ in., $8\frac{3}{8}$ in., and $8\frac{5}{8}$ in. in girth; and 1 ft. $6\frac{3}{8}$ in., 1 ft. $10\frac{1}{8}$ in., and 1 ft. $2\frac{7}{8}$ in. from tip to tip.

Himalayan Ibex (*Capra sibirica*)—The respective weights of a male and female are given as 188 lbs. and 104 lbs. The height of one male specimen was stated to be 3 ft. 4 in. at shoulder; that of a female 6 in. less. Another male was 3 ft. 2 in. in height; 4 ft. 6 in. in length of head and body; tail 8 in. Horns vary in length from 4 ft. $3\frac{1}{2}$ in. (Lydekker records a pair of upwards of 4 ft. 6 in.) to below 3 ft., the girth being from 1 ft. $0\frac{1}{2}$ in. downwards. Greatest spread, 3 ft.

Arabian Ibex (*Capra sinaitica*)—No weights nor body-measurements given, but horns range in length from 4 ft. $3\frac{1}{4}$ in. down to 3 ft. $2\frac{7}{8}$ in.; in girth from $9\frac{1}{4}$ in. to $7\frac{1}{4}$ in.; span 1 ft. $0\frac{1}{4}$ in.

Abyssinian Ibex (*Capra walie*)—No weights nor body-measurements given, but a pair of horns are said to have had a length of 2 ft. with girth $9\frac{3}{4}$ in.

Markhor (*Capra falconeri*)—Several varieties are known, but there appears to be only one species. Heights are given of 3 ft. 8 in. and 3 ft. $2\frac{1}{2}$ in. at shoulder, and lengths of horns around curve are recorded as 5 ft. 3 in., 5 ft. 1 in., 4 ft. 11 in., 4 ft., and under. Measured in a straight line, the greatest length appears to be 3 ft. $6\frac{1}{2}$ in. Greatest circumference 1 ft. $0\frac{3}{8}$ in. Span at tips from about 4 ft. 4 in. downwards.

Tahr (*Hemitragus jemlaicus*)—Males are given as weighing 200 lbs., and as standing from 3 ft. to 3 ft. 4 in. at shoulder, with a total length of 4 ft. 6 in. Greatest length of horns 1 ft $2\frac{1}{8}$ in. Greatest circumference 9 in.; span $11\frac{1}{4}$ in.

Nilgiri Goat (*Hemitragus hylocrius*)—Called "Ibex" by Indian sportsmen. Has a height of from 3 ft. 3 in. to 3 ft. 6 in. at shoulder. Greatest length of horns recorded, 1 ft. 7 in. with a girth of $9\frac{5}{8}$ in. Greatest span $7\frac{7}{8}$ in.

Goral (*Nemorhædus goral*)—Sometimes called Himalayan Chamois. Height at shoulder 2 ft. 4 in. to 3 ft.; total length 4 ft. Weight from 45 to 63 lbs. Greatest length of horns given, $11\frac{1}{4}$ in., with a perpendicular measurement of $7\frac{3}{4}$ in., a girth of $3\frac{1}{2}$ in., and a spread at tips of $6\frac{1}{2}$ in. Lengths of others are given as $8\frac{1}{2}$ in. to $7\frac{3}{8}$ in., with a much less girth and spread.

Himalayan Serow (*Nemorhædus bubalinus*)—Called also Forest Goat. Height of one recorded as 3 ft. 2 in. at shoulder; weight as 190 lbs. Greatest length of horns recorded, 1 ft. $1\frac{1}{2}$ in. A specimen, $10\frac{1}{2}$ in. in length, had a girth of $5\frac{3}{8}$ in. and spread of $3\frac{1}{2}$ in.; $5\frac{5}{8}$ in. girth, and $5\frac{1}{4}$ in. spread are, however, recorded.

Takin (*Budorcas taxicolor*)—Height, 3 ft. 6 in. at shoulder. Of horns, the greatest length recorded is 2 ft., and a pair 1 ft. $10\frac{3}{8}$ in. had a girth of $10\frac{5}{8}$ in. and a spread at tips of 1 ft. $2\frac{3}{4}$ in.

Rocky Mountain Goat (*Haploceros montanus*)—Girth around chest after skinning, 4 ft. 8 in. Weight is given as averaging 100 lbs. Greatest length of horns given, $11\frac{1}{2}$ in.; girth $6\frac{1}{2}$ in.; spread at tips, $6\frac{1}{2}$ in.

Chamois (*Rupicapra tragus*)—Weight from 50 to 70 lbs. Greatest length of horns given, $10\frac{1}{4}$ in.; girth, $4\frac{1}{8}$ in.; spread at tips, $5\frac{1}{4}$ in

Eland (*Orias canna*)—One of the few species of Antelopes in which the horns of the cows exceed in length, though not in thickness, those of the bulls. Selous shot one 5 ft. 9 in. in height at withers. Weight 800 to 1,100 lbs.; old bulls sometimes attaining to 1,500 lbs. Maximum length of horns, according to F. Coburn, 2 ft. 10 in., combined with the maximum girth of 1 ft. $1\frac{1}{2}$ in. Greatest spread at tips recorded, 2 ft. $1\frac{1}{2}$ in.

Derbian Eland (*Orias derbianus*)—The horns of the male in this species are larger than in the preceding, but those of the cow are smaller. Sir Edmund Loder possesses a pair 2 ft. $10\frac{1}{4}$ in. in length; 1 ft. $\frac{5}{8}$ in. in girth; and 1 ft. $10\frac{3}{4}$ in. in spread at tips, but this spread has been exceeded by a pair measuring 2 ft. $5\frac{7}{8}$ in. between tips.

Kudu or **Koodoo** (*Strepsiceros kudu*)—Males may stand about 4 ft. 4 in., and even 5 ft., at shoulder. The length of body is stated to be 9 ft. Selous shot one whose horns measured, in a straight line from base to tip, 3 ft. $9\frac{3}{8}$ in.; around curve, 5 ft. $0\frac{5}{8}$ in.; basal girth, $11\frac{1}{2}$ in.; spread between tips, 2 ft. 9 in. Another pair taken by him had a length, from base to tip, of 3 ft. 5 in., with the maximum measurement around spiral turn of 5 ft. 3 in.

Lesser Kudu or **Koodoo** (*Strepsiceros*

imberbis)—Maximum measurements of different horns are: Length in straight line, 2 ft. 1½ in.; length around curve, 2 ft. 7½ in.; circumference, 6⅞ in.; spread at tips, 1 ft. 3¼ in.

Harnessed Antelope (*Tragelaphus scriptus*)—Under this designation are to be found four varieties formerly considered as species—the present, the typical variety of West, Central, and South-Central Africa; the second from Abyssinia; the third from East Africa; and the fourth, the "Bushbuck" of the Cape. Stated to stand 2 ft. 8 in. at shoulder, and to measure about 5 ft. in length. The maximum measurements recorded of different horns are: Length, 1 ft. 5⅞ in.; girth, 6⅜ in.; spread at tips, 9¼ in.

West African Harnessed Antelope (*Tragelaphus gratus*)—Height at shoulder, 3 ft. 6 in.; length from chest to rump, 3 ft. 6 in.; tail, 11½ in.; ears, 5½ in. Maximum length of horns, from a specimen in the British Museum, 1 ft. 7 in. A pair in the late Sir Victor Brooke's collection measured 1 ft. 6 in. in a straight line; 1 ft. 11½ in. around curve; 7⅞ in. in circumference, and 11¾ in. in spread at tips.

Central African Harnessed Antelope, Situtunga, or **"Nakong"** (*Tragelaphus spekei*)—Height of male at shoulder, 3 ft. 7 in. Maximum measurements of different horns are: Length around curve, 2 ft. 8⅝ in.; in straight line, 2 ft. 3 in.; girth, 8⅛ in.; spread at tips, 1 ft. 7⅜ in.

Nilgai (*Boselaphus tragocamelus*)—Height of males, 4 ft. 4 in. to 4 ft. 8 in., or even 4 ft. 10 in., at shoulder; length, 6 ft. 6 in. to 7 ft.; tail, 1 ft. 6 in. to 1 ft. 9 in. Maximum measurements of different horns are: Length, 11¾ in.; circumference, 9½ in.; spread at tips, 7¾ in.

Addax (*Addax nasomaculatus*)—Height, 3 ft. Maximum measurements of different horns: Length along curve, 2 ft. 11¾ in; length in straight line, 2 ft. 4⅜ in.; circumference, 6⅜ in.; spread at tips, 1 ft. 5⅜ in.

Gemsbok (*Oryx gazella*)—Height, 4 ft. Horns of the female usually longer than those of the male. Maximum records of different horns: Length, 3 ft. 11½ in.; circumference, 8⅜ in.; spread at tips, 1 ft. 1⅞ in.

Beisa (*Oryx beisa*)—No body-measurements nor weights appear to have been ascertained. Horns of the female, as in the preceding, longer than those of the male. Maximum measurements of different horns are: Length (female), 3 ft. 3 in.; circumference, 8⅞ in.; spread at tips, 10½ in.

Fringe-eared Oryx (*Oryx callotis*)—No body-measurements nor weights appear to have been recorded. Maximum measurements of different horns are: Length, 2 ft. 6½ in.; girth, 7⅛ in.; spread at tips, 1 ft. 1 in.

Sabre-horned Antelope (*Oryx leucoryx*)—No body-measurements nor weights are to hand. The longest horns recorded are a pair in the British Museum with a length of 3 ft. 3⅝ in.; girth, 4⅞ in.; spread at tips, 1 ft. 2⅛ in. Shorter horns, however, have measured 5½ in. in girth, with a less spread.

Roan Antelope (*Hippotragus equinus*)—Height at shoulder, 4 ft. 6 in. Maximum measurements of different horns: Length, 3 ft. 6 in.; girth, 10½ in.; spread at tips, 1 ft. 2 in.

Sable Antelope (*Hippotragus niger*)—Height at shoulder, 4 ft. 6 in.; extreme length nearly 9 ft.; tail, 2 ft. 1 in.; ears, 10 in. Maximum measurements of different horns: Length, 3 ft. 10 in.; girth, 10½ in.; spread at tips, 1 ft. 7½ in.

Springbuck (*Gazella euchore*)—Height, 2 ft. 6 in. Maximum measurements of different horns: Length on curve, 1 ft. 3¼ in.; girth, 7 in.; spread at tips, 5⅞ in.; widest span inside, 8½ in.

Dorcas Gazelle (*Gazella dorcas*)—Height at shoulder, about 2 ft. Of different horns, the maximum measurements recorded are: Length, 1 ft. 1¼ in.; girth, 4¼ in.; spread at tips, 4¾ in.

Indian Gazelle or **Ravine Deer** (*Gazella bennetti*)—Height at shoulder, 2 ft. 2 in. Of different horns, the maximum measurements are: Length, 1 ft. 2¼ in.; girth, 4⅝ in.; spread at tips, 7⅞ in.

Swift Gazelle (*Gazella mohr*)—Height at shoulder, 2 ft. 6 in.; at croup, 2 ft. 8 in.; length, from nose to root of tail, 4 ft. 2 in.; head, from nose to root of horn, 7 in.; tail, without terminal tuft, 7 in. The longest horns—those of a female—are 1 ft. in length, 3¼ in. in girth, and 5⅛ in. from tip to tip.

Clarke's Antelope (*Ammodorcas clarkei*)—Several specimens of this new (1891) Antelope have been procured, but it is much to be regretted that no sportsman appears to have taken the trouble to ascertain the body-measurements or weights. Maximum measurements of different horns: Length, 11¾ in.; girth, 5 in.; spread at tips, 5⅛ in.

Waller's Antelope or **Gerenuk** (*Lithocranius walleri*)—No body-measurements nor weights to hand. Of different horns, the maximum measurements are: Length, 1 ft. 3⅜ in.; girth, 5⅞ in.; spread at tips, 6 in.

Thibetan Antelope or **Chiru** (*Pantholops hodgsoni*)—Height at shoulder, 2 ft. 11 in. Of different horns, the maximum measurements are: Length, 2 ft. 4½ in.; girth, 5⅞ in.; spread at tips, 1 ft. 4½ in.

Saiga Antelope (*Saiga tartarica*)—No body-measurements nor weights are given except of a skeleton, which is said to stand 2 ft. 7¾ in. at shoulder, and to measure 3 ft. 2 in. along "spinal cord." Maximum measurements of different horns: Length, 1 ft. 2⅜ in.; girth, 5⅜ in.; spread at tips, 5⅝ in.

Impala Antelope (*Æpyceros melampus*)—Height about 3 ft. Maximum measurements of different horns: Length, 1 ft. 9½ in.; around

bend, 2 ft. $3\frac{1}{2}$ in.; circumference, 6 in.; spread at tips, 1 ft. $5\frac{5}{8}$ in.; widest outside, 1 ft. 8 in.

Black-buck or **Indian Antelope** (*Antilope cervicapra*)—The height at shoulder is given as 2 ft. 8 in., and the average weight as 85 lbs.; the size, however, varies considerably in different localities, the smallest variety being found in Mysore, where, according to Sanderson, horns average 1 ft. 2 in. in length and rarely exceed 1 ft. 6 in., although, in other parts of India, the average length is 2 ft. 2 in. or 2 ft. 3 in. Maximum measurements of different horns: Length in straight line, 2 ft. $4\frac{1}{4}$ in.; around curve, 3 ft. $4\frac{1}{2}$ in.; circumference, $5\frac{7}{8}$ in.; spread at tips, 1 ft. $9\frac{3}{4}$ in.

Reedbuck (*Cervicapra arundineum*)—Height about 2 ft. Maximum measurements of different horns: Length, 1 ft. $3\frac{7}{8}$ in.; girth, $7\frac{3}{8}$ in.; spread at tips, 1 ft. $2\frac{3}{8}$ in.

Water-Buck (*Cobus ellipsiprymnus*)—Height, 4 ft. Maximum measurements of different horns: Length, 2 ft. $9\frac{1}{2}$ in.; girth, $9\frac{5}{8}$ in.; spread at tips, 2 ft. $1\frac{1}{2}$ in.

Sing-sing Antelope (*Cobus defassus*)—Height at shoulder is given as 3 ft. $9\frac{3}{4}$ in.; length, rump to front of shoulder, 4 ft. 4 in.; head, from between horns to tip of muzzle, 1 ft. $1\frac{1}{2}$ in.; tail, 1 ft. 4 in.; ears, from 1 ft. 8 in. to 2 ft. Maximum measurements of different horns: Length, 2 ft. $3\frac{3}{8}$ in.; girth, $8\frac{5}{8}$ in.; spread at tips, 1 ft. $9\frac{3}{8}$ in.

Rhebok (*Pelea capreola*)—Height about 2 ft. 6 in. Maximum measurements of different horns: Length, $8\frac{5}{8}$ in.; girth, $2\frac{1}{2}$ in.; spread at tips, $3\frac{1}{2}$ in.

Klipspringer (*Oreotagus saltator*)—Height, 1 ft. 10 in. Maximum measurements of different horns: Length, $4\frac{3}{8}$ in.; girth, $2\frac{1}{2}$ in.; spread at tips, $3\frac{1}{4}$ in.

Steinbuck (*Nanotragus campestris*)—Height, 1 ft. 11 in. The largest horns are recorded as $5\frac{3}{8}$ in. in length and 2 in. in girth, with $1\frac{3}{4}$ in. spread at tips, this spread being often exceeded, however, by smaller horns, the maximum being $2\frac{5}{8}$ in.

Kirk's Antelope (*Neotragus kirki*)—Measurements of the female only are to hand, which are: Length of head, $4\frac{1}{2}$ in.; of ear, $2\frac{1}{4}$ in.; of body and neck, 1 ft. 1 in.; of fore-leg from elbow-joint, $7\frac{1}{3}$ in.; hind-leg from knee, 10 in.; hind-foot from heel, $6\frac{1}{4}$ in. Weight only a few pounds. The short horns are only 2 in. to 3 in. in length, about $1\frac{1}{2}$ in. in girth, and $1\frac{1}{2}$ in. to nearly 2 in. in spread at tips.

Duikerbok (*Cephalolophus grimmi*)—Although it is supposed that only the males are horned, yet Mr. Selous has met with three examples of horned females. Height about 2 ft. 2 in. Maximum measurements of different horns: Length, $5\frac{3}{8}$ in.; girth, $2\frac{1}{2}$ in.; spread at tips, 3 in.

Four-Horned Antelope or **Chousingha** (**Charsingha**) (*Tetraceros quadricornis*)—Height of male, about 2 ft. 2 in. at shoulder, and slightly higher at croup. The remarkable horns, which are only found in the male, have greater length in the posterior than in the anterior pairs. Maximum measurements of different horns are: Of the posterior pair, length, $4\frac{3}{4}$ in.; girth, 3 in.: spread at tips, 3 in. Of the anterior pair, $2\frac{1}{2}$ in., $2\frac{3}{8}$ in. and $2\frac{7}{8}$ in. respectively.

White-Tailed Wildebeest or **Gnu** (*Connochætes gnu*)—Height, 4 ft. 6 in. at shoulder. Maximum measurements of different horns: Length, 1 ft. $10\frac{3}{8}$ in.; breadth of palm, $10\frac{5}{8}$ in.; spread at tips, 1 ft. $6\frac{5}{8}$ in.; width inside, 1 ft. $11\frac{1}{8}$ in.

Blue or **Brindled Wildebeest** or **Gnu** (*Connochætes taurina*)—Maximum measurements of different horns: Length, 2 ft. $2\frac{5}{8}$ in.; breadth of palm, $9\frac{7}{8}$ in.; girth, 1 ft. $2\frac{1}{2}$ in.; spread at tips, 1 ft. $7\frac{1}{2}$ in.; width inside, 2 ft. $4\frac{1}{2}$ in.

Hartebeest (*Bubalis caama*)—Height, 4 ft. Maximum measurements of different horns: Length, 2 ft. $0\frac{3}{4}$ in.; girth, $11\frac{1}{2}$ in.; spread at tips, $10\frac{3}{8}$ in.

Hunter's Hartebeest (*Bubalis hunteri*)—Height, 4 ft.; length of body, 4 ft.; of tail, 1 ft. 3 in.; of ears, 6 in. Maximum measurements of different horns: Length, around curve, 2 ft. $2\frac{1}{4}$ in.; in straight line, 1 ft. 10 in.; girth, $8\frac{3}{8}$ in.; spread at tips, 1 ft. 4 in.

Tsessebe, Sassabi or **Bastard Hartebeest** (*Bubalis lunatus*)—Height, 3 ft. 10 in. to 4 ft. Maximum measurements of different horns: Length, 1 ft. $3\frac{5}{8}$ in.; girth, $8\frac{1}{8}$ in.; spread at tips, 1 ft. $1\frac{5}{8}$ in.

Blesbok (*Bubalis albifrons*)—Height about 3 ft. 2 in. Maximum measurements of different horns: Length, 1 ft. $6\frac{1}{4}$ in.; girth, $6\frac{1}{2}$ in.; spread at tips, 1 ft. $0\frac{1}{4}$ in.

Bontebok (*Bubalis pygargus*)—Height, 3 ft. to 4 ft. Maximum horn measurements, which are those of one pair in the British Museum, are: Length, 1 ft. $4\frac{3}{8}$ in.; girth, $6\frac{3}{4}$ in.; spread at tips, $9\frac{1}{8}$ in.

Prong-horned Antelope (*Antilocapra americana*)—Height about 2 ft. 10 in. at shoulder, and 3 ft. or rather more at croup. Length of tail, 3 in. Weight, about 80 lbs. clean. Maximum measurements of different horns: Length, 1 ft. 5 in.; with spread, 1 ft. 8 in.: girth, $6\frac{1}{2}$ in.

Giraffe (*Giraffa camelopardalis*)—Height of males, 18 ft. to 19 ft. to crown of head; females about 2 ft. less. Horns, a few inches in length.

Red Deer (*Cervus elaphus*)—Height of a good stag, 4 ft. at shoulder. Weights of Scotch specimens range from 280 to 420 lbs., but one killed at Woburn sixty years ago weighed 476 lbs. = 34 stone. Greater weights are, however, attained by stags of Eastern and Northern Asia. Maximum measurements of different antlers: Greatest length around outside, 5 ft. 8 in., with a spread inside of 5 ft. 5 in.; this pair had forty-four points, and their weight was 74 lbs.; they were from Central Europe, prob-

ably Austria. The greatest spread, however—6 ft. $3\frac{6}{10}$ in.—has been attained by a pair now in the King of Saxony's collection at Moritzburg, whose history dates back to 1586. Some of the prehistoric stags had antlers which carried astounding numbers of points, ranging from that given above to sixty-six. Between 1611 and 1656, the Elector of Saxony killed 24,563 stags, ranging from one of thirty points to 1,192 of fourteen, of which the heaviest stag weighed 61 st. 11 lbs.; 59 exceeded 56 stone; 651 exceeded 48 stone; 2,679 exceeded 40 stone; and 4,139 exceeded 32 stone. Since that time, the deterioration of the German stags has been as marked as that of the British. In Northern Hungary, and in the Carpathian Alps, stags are still sometimes met with of the clean weight of from 35 to 40 stone.

Of British stags, two only are recorded which carried twenty points; one (11 + 9) which was alive in Ireland, and the property of the late Sir Victor Brooke, and the other (10 + 10) shot by Lord Burton, in 1893, in the forest of Glen Quoich, Scotland.

Kashmir Stag or **Hangul** (*Cervus cashmirianus*)—Height, 4 ft. 4 in. The weight of one is given as 400 lbs. as shot. Maximum measurements of different antlers: Length, 4 ft. 7 in.; girth, 8 in.; spread, from tip to tip, 2 ft. 11 in.; width inside, 4 ft. 1 in. A pair recorded by the late Sir Victor Brooke had sixteen points.

Sikkim Stag or **Shou** (*Cervus affinis*)—Height up to 5 ft. Maximum measurements of different antlers: Length, 4 ft. $7\frac{3}{4}$ in.; girth, $9\frac{1}{8}$ in; spread between tips, 3 ft. $3\frac{1}{4}$ in.; width inside, 3 ft. $9\frac{3}{4}$ in. Greatest number of points, thirteen.

Wapiti (*Cervus canadensis*)—This, which is called in America, of course erroneously, the "Elk," attains large proportions, and is probably not specifically distinct from the Asiatic Thian Shan Stag and its varieties. Height of stags from 5 ft. 4 in. to 5 ft. 8 in. Length, from tip of nose to tail, 9 ft.; girth of body over heart, 6 ft. 8 in.; weight, from 700 to 1,000 lbs. Williamson, however, records the abnormal weight of 1,200 lbs. Maximum measurements of different antlers: Length along beam, 5 ft. 5 in. (right), 5 ft. 4 in. (left); girth, 1 ft. $4\frac{1}{2}$ in. (but ?, 12 in. being an abnormal girth measurement between bez and trez); spread between tips, 4 ft. $1\frac{7}{8}$ in.: width inside, 5 ft. 1 in. Greatest number of points, twenty-five.

Japanese Deer (*Cervus sika*)—No body-measurements nor weights are to hand. Maximum measurements, which are those of one pair of horns: Length, 2 ft. $7\frac{1}{4}$ in.: girth, $5\frac{1}{4}$ in.; spread between tips, 2 ft. $3\frac{1}{8}$ in.; width inside, 2 ft. $3\frac{3}{8}$ in. Greatest number of points recorded, sixteen.

Axis, Indian Spotted Deer, or **Chital** (*Cervus axis*)—Height very variable, that of a buck in Northern or Central India being from 3 ft. to 3 ft. 2 in., whilst in Southern India the height attained is from 2 ft. 6 in. to 2 ft. 8 in.; weight, about 145 lbs. Maximum measurements of different antlers: Length, 3 ft. $2\frac{3}{4}$ in.; girth, $6\frac{1}{2}$ in; spread between tips, 2 ft. $6\frac{1}{2}$ in. Greatest number of points, twelve.

Sambar (*Cervus unicolor*)—Height, 4 ft. 6 in.; weight of large specimens, 600 to 700 lbs. Maximum measurements of different antlers: Length around outside, 3 ft. $10\frac{1}{2}$ in.; girth above brow-tine, $7\frac{7}{8}$ in.; spread between tips, 3 ft. $8\frac{7}{8}$ in.; width inside, 3 ft. $9\frac{7}{8}$ in. Greatest number of points, thirteen, but, in nine-tenths of the specimens recorded, the number is 3 + 3.

Hog Deer (*Cervus porcinus*)—Height, from 2 ft. to 2 ft. 3 in; total length, 4 ft.; weight as shot, 96 lbs. Maximum measurements of different antlers: Length, 1 ft. 9 in.; girth above brow-tine, $3\frac{1}{2}$ in.; spread between tips, 1 ft. $6\frac{3}{4}$ in.

Swamp Deer (*Cervus duvaucelli*)—Height of bucks, 3 ft. 8 in. to 3 ft. 10 in; weight of large specimens, up to 570 lbs., *i.e.* 40 st. 10 lbs. Maximum measurements of different antlers: Length around outside, 3 ft. 5 in.: girth, $5\frac{3}{4}$ in.; spread between tips, 3 ft. $2\frac{3}{8}$ in; width inside, 3 ft. $1\frac{1}{2}$ in. Greatest number of points, fourteen.

Fallow Deer (*Cervus dama*)—Height, about 3 ft. Length: head and body, 4 ft.; tail, including hair, 1 ft. 2 in.; caudal vertebræ, 9 in.; head, 1 ft. $0\frac{1}{2}$ in.; ear, $6\frac{1}{2}$ in. Maximum measurements of different antlers: Length, 2 ft. $4\frac{3}{8}$ in.; girth, $4\frac{3}{8}$ in.; width of palm, 6 in.; spread between tips, 2 ft. 2 in.: width inside, 2 ft. 2 in. Greatest number of points, twenty-two.

Indian Muntjac, Barking Deer, or **Kakar** (*Cervulus muntjac*) — Height, from 1 ft. 8 in. to 1 ft. 10 in. Average length of antlers, 3 in. or 4 in. on pedicels of 4 in. or 5 in.; but a maximum length of 11 in. is said to have been attained.

Reindeer or **Caribou** (*Rangifer tarandus*)—Notwithstanding the constantly reiterated opinions of sportsmen as to the specific distinctions between the Old World Reindeer and the New World Reindeer or Caribou, whether Woodland or Barren-ground, it will be better to consider that there is but one species, variable in size and coloration according to geographical distribution. Curiously, no body-measurements nor weights of the Old World form appear to have been recorded, but those of a "Woodland Caribou" bull are: Length from nose to root of tail, 6 ft. 7 in; height at shoulder, 4 ft. 5 in.; height behind saddle on rump, 4 ft. 7 in.: girth behind forelegs, 5ft. 1 in.; length of neck (along top), 1 ft. 5 in.; weight (estimated), 400 lbs. Of the horns—which, unlike those of other deer, are borne by the female as well as by the male—the maximum length is given as 5 ft. Maximum girth, $7\frac{1}{4}$ in.; spread between tips, 3 ft. 4 in.; widest inside, 4 ft. $0\frac{3}{8}$ in. Greatest number of points, 20 + 27 = 47; this in a New World

specimen in the British Museum. Norwegian antlers, which appear to be smaller, have attained 32 points, and their measurements, in the order given above, are 3 ft. $2\frac{3}{8}$ in.; $5\frac{3}{8}$ in.; 1 ft. $9\frac{3}{4}$ in.; and 2 ft. $6\frac{1}{8}$ in.

Elk or **Moose** (*Alces machlis*)—This, the greatest of all living deer, known in the Old World as the Elk, and in the New World as Moose, sometimes attains a height of 18 hands or more. Average body-measurements of Scandinavian specimens over seven years old are—Height at withers, 5 ft. 8 in. to 9 in.; at quarters, 5 ft. 5 in. to 6 in.; from ground to belly, 3 ft. 4 in. Length, from crest to tail, 9 ft. 5 in.; crest to nose, 2 ft. 5 in. Greatest girth, 6 ft. 11 in. to 7 ft.; around thigh, 3 ft; around forearm, 1 ft. 11 in. Weight (uncleaned), estimated as occasionally exceeding 1,400 lbs. The horn-measurements of one Scandinavian example are: Height of horns from tip of central brow point to tip of highest back point, 3 ft. 1 in.; height of palmation, exclusive of said points, 2 ft. $6\frac{1}{4}$ in.; 2 ft. 5 in.; curve of inner edge of horns, from coronet to tip of inside back points, 2 ft. $0\frac{1}{2}$ in.; between tips of inner back points, 1 ft. $11\frac{3}{4}$ in.; between inner brow points, $11\frac{1}{2}$ in.; between tips of fifth points on either side, following curve and across brow, 4 ft. $5\frac{7}{8}$ in.; the same measurement, taut, 3 ft. $5\frac{3}{4}$ in.; across skull at brow, $7\frac{1}{2}$ in.; fifth point (right), $6\frac{1}{4}$ in.; fifth point (left), $7\frac{3}{4}$ in.; around coronet, $10\frac{1}{4}$ in.; around base of horn, $6\frac{7}{10}$ in. Maximum measurements of various other European antlers are:—Length of longest tine, 2 ft. 8 in.; girth above burr, $7\frac{1}{2}$ in.; spread between tips, 3 ft. 4 in; greatest width, 4 ft. $1\frac{7}{8}$ in.; breadth of palm, 1 ft. $0\frac{1}{2}$ in. Number of points, twenty-four. A pair of antlers, which appear to have no parallel, are of the American variety, and are stated to have attained a spread, from tip to tip, of 5 ft. 6 in.; and another abnormal pair, which were but an inch less in spread, measured 3 ft. 5 in. along palmation, with a corresponding width of 2 ft. The next greatest measurements of different antlers (American) are: Length, to longest tine, 3 ft. $3\frac{1}{2}$ in., with girth above burr, $8\frac{1}{2}$ in. Spread between tips, 3ft. 6in. Greatest width, 4 ft. $11\frac{1}{4}$ in. Breadth of palm, 1 ft. 8 in. Maximum number of points, twenty-seven.

Roe Deer (*Capreolus caprea*)—Height, 2 ft. 2 in. Weight of buck, about 60 lbs. Maximum length of horns, 1 ft. 3 in. (Austria); anything over 9 in. is, however, exceptional, and the next largest pair recorded—from Dorsetshire—have a length of $9\frac{7}{8}$ in., a girth of 5 in., and a spread of 5 in. between tips, the last measurement being exceeded by 1 in. in another pair, also from Dorsetshire.

Pampas Deer (*Cariacus campestris*)—Height, about 2 ft. 6 in. Maximum measurements of different horns: length, 1 ft. $2\frac{5}{8}$ in. Girth, $3\frac{7}{8}$ in. Spread between tips, 1 ft. $2\frac{1}{4}$ in. Points, normally six.

Virginian or **White-Tailed Deer** (*Cariacus virginianus*)—Very variable in size. Weight, 180 lbs. to 200 lbs. Maximum measurements of different antlers: Length of one antler in British Museum, 2 ft. $3\frac{5}{8}$ in., with girth, $5\frac{3}{8}$ in., exceeded in last measurement by a pair, $5\frac{5}{8}$ in. Greatest spread between tips, 1 ft. $2\frac{1}{2}$ in. Widest inside, 1 ft. $7\frac{7}{8}$ in. Points, fifty-two.

Mule-Deer (*Cariacus macrotis*) — Often called, in Colorado, the "Black-tail," which can only be properly applied to the next species. No actual body-measurements nor weights are given. Maximum measurements of different antlers: Length, 2 ft. 8 in. Girth, $6\frac{3}{4}$ in. Spread between tips, 2 ft. $3\frac{3}{8}$ in. Width inside, 3 ft. 5 in. Points, thirty-three.

Black-Tailed Deer (*Cariacus columbianus*)—Weight, about 200 lbs. Maximum measurements of different antlers: Length, 2 ft. $4\frac{5}{8}$ in. Girth, $5\frac{1}{2}$ in. Spread between tips, 1 ft. $9\frac{3}{8}$ in. Width inside, 2 ft. 2 in. Points, twenty.

There are many small deer, such as the Musk and the Chevrotains, characterised by the replacement of horns by tusks, which may be passed over here, as, indeed, may be the camels, which are only found in a semi-wild state, or escaped from an ancient captivity.

Guanaco (*Lama guanacus*) — Height of full-grown male, about 4ft. Length, from 7 ft. to 8 ft.

Wild Pig or **Wild Boar** (*Sus scrofa*)—Whether the European Wild Boar is specifically distinct from the Indian is rather a vexed question, but Mr. Lydekker, who is an accomplished biologist, and in the best position for judging, inclines to that belief; it is, therefore, to the former that the following measurements belong:—Height, about 3 ft. 5 in. Extreme weight, 600 lbs. Maximum length of tusk round outside edge, $11\frac{1}{2}$ in.

Indian Wild Pig or **Boar** (*Sus cristatus*)—Height, from 2 ft. 6 in. to 3 ft. 4 in. (one of 3 ft. $7\frac{1}{2}$ in) at shoulder. Weight, from 200 lbs. to 300 lbs., or over. Maximum lengths of tusks of lower jaw, 10 in. and 1 ft.; girth, about $2\frac{1}{2}$ in.

There are certain other pigs, such as the Red Bush Pig, the Babirusa, &c., the length of whose tusks sometimes exceeds 1 ft. 2 in., and the Wart-Hogs and Peccaries, which lead to the—

Hippopotamus (*Hippopotamus amphibius*)—Height at shoulder, about 3 ft. 8 in. An old male, measured by Sir Samuel Baker, was 14 ft. 3 in. from snout to end of tail, this being about 9 in. Weight of fresh hide, about 5 cwt. One of a length of 12 ft., kept in confinement, weighed about 4 tons. Maximum tusk-measurements: Length around outside curve, 2 ft. $7\frac{5}{8}$ in. Girth, $9\frac{1}{2}$ in. Weight of a large pair, 15 lbs.

Malayan Tapir (*Tapirus indicus*)—Height at shoulder, 3 ft. to 3 ft. 6 in.; at croup, about

4 in. more. Length from snout to root of tail, along curves, about 8 ft.

South American Tapir (*Tapirus americanus*)—No measurements nor weights to hand.

Indian Rhinoceros (*Rhinoceros unicornis*)—Height at shoulder, 5 ft. 9 in. Length, head and body, 10 ft. 6 in.; tail, 2 ft. 5 in. Girth at chest, 9 ft. 8 in.; of forearm, 3 ft. 2 in. Horn-measurements: Jerdon mentions one 2 ft. in length, and there is one in the British Museum 1 ft. $7\frac{1}{8}$ in. in length, and 1 ft. $10\frac{3}{8}$ in. in girth.

Javan or Lesser One-horned Rhinoceros (*Rhinoceros sondaicus*)—Sterndale gives the height at shoulder as 5 ft. 6 in.; length, head and body, 12 ft. 3 in., including tail of 2 ft. $4\frac{1}{2}$ in. Horn of one in British Museum measures: Length, $10\frac{5}{8}$ in.; girth, 1 ft. $7\frac{5}{8}$ in.

Sumatran Rhinoceros (*Rhinoceros sumatrensis*)—Height at shoulder, 4 ft. to 4 ft. 6 in.; length, tip of snout to root of tail, 8 ft.; weight, about 2,000 lbs. Maximum length of anterior horn, 2 ft. $8\frac{1}{8}$ in., with girth, 1 ft. $5\frac{3}{8}$ in. The posterior horn is often very small, not more than 2 in. or 3 in.

African Rhinoceros (*Rhinoceros bicornis*)—Sir Samuel Baker and Selous state that the males may attain a height of from 5 ft. 6 in. to 5 ft. 8 in. at shoulder. An adult female stood 4 ft. $8\frac{1}{2}$ in.; length, tip of snout to root of tail, 4 ft. $11\frac{1}{2}$ in.; tail, 1 ft. $9\frac{1}{2}$ in. Maximum measurements of anterior horn: Length, 3 ft. 7 in. and 3 ft. 8 in.: girth, 2 ft. $2\frac{1}{4}$ in. Posterior horn: Length, 1 ft. $7\frac{1}{2}$ in.; girth, 1 ft. $8\frac{1}{2}$ in.

White or Burchell's Rhinoceros (*Rhinoceros simus*)—Height at shoulder, maximum 6 ft. 6 in. One, a male, mentioned at p. 329, P.Z.S. 1894, measured 6 ft. $1\frac{1}{2}$ in. at the withers; length between uprights, 12 ft. 1 in.; from lip along base of horns up between ears and following curves of back to root of tail, 13 ft.; to tip of tail, 15 ft. $8\frac{1}{2}$ in.; girth behind shoulders, 10 ft. $3\frac{1}{2}$ in.; round fore-arm, 3 ft. $4\frac{1}{2}$ in.; the width of the lip between the greatest depth of the nostrils is just under 12 in.; anterior horn measures 2 ft. 3 in. Maximum length of anterior horn, now in British Museum, 4 ft. $8\frac{1}{2}$ in., with girth, 1 ft. $11\frac{1}{2}$ in. Others measure 3 ft. 8 in., with girth, 1 ft. 8 in.; 3 ft. $6\frac{3}{4}$ in., with girth, 2 ft. $1\frac{5}{8}$ in. Posterior horns are noted of 1 ft. $5\frac{7}{8}$ in. length.; maximum girth, 1 ft. $7\frac{1}{4}$ in.

Passing over the **Tarpan** or **Wild Horse** of Central Asia we come to—

Zebra (*Equus zebra*)—Height at withers, 4 ft. to 4 ft 2 in.

Burchell's Zebra (*Equus burchelli*)—Height, 4 ft. 4 in. to 4 ft. 6 in.

The **Quagga** and the **Wild Asses** may be passed over. There remain the two largest of beasts.

Indian Elephant (*Elephas indicus*)—Average height of adult male, about 9 ft.; of adult female, 8 ft. A first-class "Koomeriah" or thorough-bred, which was probably sixty years of age, is stated by Sanderson to have measured 9 ft. 2 in. at shoulder. Sterndale gives 10 ft. $7\frac{1}{2}$ in. as the maximum authentic record, but a specimen killed by the late Sir Victor Brooke is said to have stood 11 ft.; and for another, whose skeleton now stands 11 ft. 3 in. in the Museum at Calcutta, an original height of 12 ft. is claimed, the same height being also attributed to a Ceylon example. An elephant's height is normally double the girth of its forefoot. The length of an animal, which stood 9 ft. 7 in. at shoulder, is given by Sanderson as 26 ft. $2\frac{1}{2}$ in. from tip of trunk to tip of tail. The weight of an adult specimen does not appear to have been recorded, but a young male at the Zoological Gardens in 1881, whose height was 8 ft., weighed 2 tons, 17 cwt., 1 qr., 23 lbs.; and another, 7 ft. 6 in. in height, weighed 2 tons, 11 cwt., 0 qr., 23 lbs. The maximum tusk-measurements pertain to the only perfect tusk of the fine animal killed by Sir V. Brooke: Total length, outside curve, 8 ft., *i.e.* outside socket, 5ft. 9in., inside socket, 2 ft. 3 in.; greatest girth, 1 ft. $4\frac{11}{16}$ in.; weight, 90 lbs.

Greater weights have, however, been attained; a tusk of 6 ft. in length is stated to have weighed 100 lbs., and others, from the Garo Hills, are said to have reached 155 lbs. and 157 lbs. respectively.

African Elephant (*Elephas africanus*)—The dimensions and weight of a male specimen, killed by H.R.H. the Duke of Coburg, are given as: Height at withers, 10 ft.; length, from tip of trunk to tip of tail, 23 ft. 5 in.; from crown of head to tip of trunk, 11 ft. 3 in.; girth, 16 ft. 6 in.; girth of head, 10 ft.; from ear to ear, 9 ft.; length of ear, 4 ft. 6 in; entire weight, 4 tons, 8 cwt., 4 lbs. Of another male, killed by Sir John Kirk, the dimensions were: Height, 10 ft. 3 in.; total length, 25 ft. 2 in.; crown of head to tip of trunk, 9 ft.; tail, 4 ft. 2 in.; maximum girth, 18 ft.; girth of fore-foot, 5 ft. 1 in.; width of ear, 3 ft.; length, 5 ft. 9 in. The respective dimensions of two elephants, shot by Selous and Jameson are given as: Height at shoulder, 10 ft. and 10 ft. 4 in.; length of ear, 5 ft. 5 in. and 5 ft. $6\frac{1}{2}$ in.; breadth, 3 ft. 3 in. and 3 ft. 4 in.; girth of fore-foot, 4 ft. $4\frac{1}{2}$ in. and 4 ft. $7\frac{1}{2}$ in. The renowned "Jumbo" stood 11 ft. at withers, and weighed 6 tons, 10 cwt.; and even this height is exceeded by one recorded in the *Museum of Natural History*, whose height is given as 12 ft.

The dimensions and weight of a baby elephant, aged one hour, are stated to have been: Height at shoulder, 2 ft. $10\frac{1}{2}$ in.; length of trunk, 1 ft.; tail, 1 ft. 8 in.; girth at thorax, 3 ft. 9 in.; at abdomen, 4 ft. 1 in.: at base of trunk, 9 in.: of fore-foot, 1 ft 5 in.; weight, 213 lbs.

Maximum tusks recorded: Length of one, 9 ft. 5 in.; and 1 ft. $10\frac{1}{2}$ in. in girth, which weighed 184 lbs.: weight, 173 lbs.; but this weight is said to have been exceeded by a tusk

weighing 188 lbs. The next weights are 172; 160; 110; and 103 lbs., of the three last of which the respective lengths and girths are 9 ft. 4 in. and 1 ft. 8½ in.; 9 ft. 4 in. and 1 ft. 6 in.; 7 ft. 9 in. and 1 ft. 7 in. The length of 20 ft. 9 in. given for a tusk by Gordon Cumming must be a mistake, inasmuch as its weight was but 173 lbs., and this is shown to be exceeded by other tusks, not half its length. Weight of cows' tusks, 12 to 14 lbs.

MONTAGU BROWNE.

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BIG HORN (*Ovis canadensis*)—This magnificent animal ranks high from a sportsman's point of view among the Big Game of North America. Although becoming scarce elsewhere, it is still very plentiful in British Columbia, especially in the district of Sheep Creek, East Kootenay, where it is preserved by a close time and a limit on the quantity to be killed.

Probably no animal is keener of scent, sight, and hearing; often, high up the mountain side, it will spend hours upon a solitary rock gazing into the depths below where no movement escapes its notice. Most necessary is it therefore to circle widely round one hich may have been sighted, and approach itonly from above, and that with the greatest cau-

tion, lest a dislodged pebble should give the alarm. At certain seasons large bands of rams herd together high up the mountains; at other times most mixed bands contain at least one old ram, and occasionally two or three old rams appear to wander about by themselves.

Shooting—There are three modes of hunting these sheep. The most legitimate of these is by fair stalking, when the man who scores a fine head will have many reasons to remember the exciting climb it entailed. In some districts

BIG HORN.
Height at shoulder 3 ft. 2 in.; av. horn meas. 35 in.; max. horn meas. 45 in.

trained dogs are used, and when a ram is sighted these are laid on, quickly bringing the animal to bay on some projecting rock, where, if the dogs know their work, they will detain him until the hunter arrives within range. A ram is easily approached under these conditions, for it seems to see nothing but the dogs.

The third method entails constantly watching "Licks," whither sheep make periodical excursions, singly and in bands, from the mountain tops to gorge themselves with clay. They may remain from an hour to two days, and when killed their stomachs will be found full of nothing but the clay formed from denuded limestone, which they lick and gnaw until sometimes deep tunnels are formed in the steep cliffs large enough completely to hide six or seven sheep. The hunter standing over one of these warrens may bolt them like rabbits within two yards of him. Although many big rams may be killed at licks, it scarcely repays the time wasted in fruitless visits. In the dead of winter sheep often come into the valleys and feed off fallen fir trees. At such times they may be seen mixed with white and black tailed deer, low down on a river's bank, and I have known them approach within forty yards of an inhabited log hut.

No North American animal affords better sport, none carries a handsomer head; but it is rare to secure a fine one with perfect tips to the horns, about three inches being nearly always worn off from constant contact with rocks. It is scarcely necessary, however, to mention that the old idea of sheep leaping down precipices and alighting on their horns is one of the many fallacies long exploded.

J. TURNER-TURNER.

BIRD'S NESTING—This favourite hobby of boys, and to a lesser extent of their elders, has, on account of much real, and some imaginary, cruelty, been condemned on all sides. While considering it desirable to give some few hints on the subject of successful collecting, it is not proposed to go into the details of individual nests. The scientific interest in the pattern of eggs lies in their "protective" colouring; and at a very early stage of his rambles the collector will not fail to observe this, more especially in connection with those laid on the ground. Nor will it escape his notice that all eggs laid within hollow trees, and similar situations in which protective colouring would be of no use, are pure white, or at most faintly marked with pale red.

Apparatus—This may be of the simplest, comprising a small tin box of cotton wool (a nest of three boxes is economy of space and is recommended for whole-day excursions), a forked stick, an egg-drill which can be purchased at natural-history stores for threepence, and a blower, easily made over a gas-jet from a penny piece of fine glass-tubing. With this unpretentious equipment, added to twelve feet of knotted rope and a small bottle of clean water, the writer collected over three hundred British eggs, most within five miles of his door.

Not but that the paraphernalia can be multiplied so as to suit the longest pocket and most extravagant tastes; and there are writers on the subject who freely advocate the use of expensive climbing-spurs, field-glasses with which to survey distant nests, and mirrors to reveal the contents of nests hidden in hollow trunks. That these are adjuncts to comfort few will deny; but it is at any rate doubtful whether this elaborately equipped collector derives half the pleasure experienced from a more rough and ready mode of procedure.

Binoculars indeed may be discarded, for they merely encourage laziness; while as climbing-spurs often bring disaster to the climber and ruin to the tree, they may also be rejected in favour of a stout rope.

Method of Collecting—A keen eye and soft tread, unflagging patience and a steady hand are the qualifications of a successful collector. Given these, the rest is a matter of practice. Some slight knowledge of sites affected by the various bird-families, a sense of discrimination between the denizens of tree, hedge

and ground, with some idea of the different breeding-seasons—these are the groundwork of the practical experience gained later.

A regular system should be followed at the outset. The best method is to map out a fixed area for each day's operations, and thoroughly search it each morning or evening.

To take an example: at Bexley, where the writer obtained the bulk of his collection, each day in the week was devoted to a particular ground, the chief being the north and south portions of Dartford Heath, Baldwin's Park, the dense shrubberies bordering the Cray Valley, some wild ground near Sidcup, and a thick wood, now fenced in, on Cold Blow. The intervening fields were much built over by larks and pipits.

Blowing—Each egg should be blown when taken, the only exception being an occasional "hard-set" specimen of sufficient value to take home and empty at leisure with forceps and fine crochet-hooks.

For the soft eggs, one hole only is necessary, and it should be drilled in the middle of the egg, not at either end. The shell is first carefully pierced with a clean needle, then the arrow-head of the drill is inserted and a rotary motion imparted so as to make the hole perfectly circular and clear its edge of the inner membrane. Next, stir up the yolk and white with the needle, being careful not to enlarge the hole further.

The pointed end of the blowpipe is then rested lightly in the aperture, and, on blowing gently, the mixed contents soon escape. When the shell is nearly empty, a little clean water is injected with the aid of the blowpipe and the egg is turned in every direction in such a manner that the water reaches every point in its interior.

Poisoning—The egg is then relegated to the wool-lined box; and immediately on reaching home, the collector should inject a few drops of solution of corrosive sublimate. A separate blowpipe should be used for this, and a very convenient form will be found in the pen-fillers (fitting in a glass bottle) supplied with stylographic pens. *Sucking* a short tube, the other end of which lies in corrosive sublimate, is not recommended. The final stage is the drying of the egg, hole downwards, on a clean sheet of white blotting-paper.

Varnishing and Waxing—Two further processes are advocated by many writers ere the egg finally rests in the cabinet. These are varnishing and waxing.

The first-named, imparting as it does a polish that is not, save in certain eggs, found in nature, is not desirable. One might as well decorate the white eggs with fancy patterns!

Waxing is more legitimate, since it counteracts to some extent the rapid fading of the exquisite transparent tints. It is not by any means a complicated process, consisting in the introduction of a *little* suitably tinted melting wax, the egg being revolved so that it shall dry in a coating of uniform thickness over the interior.

Stocking—When not being inspected, all eggs should be kept from the light which soon attacks their delicate colouring. The most pleasing way of stocking them is a matter of individual taste. Some prefer spending considerable sums in elaborate cabinets of many drawers with glass lids, simply resting the eggs on cotton-wool. Others paste them, hole downwards, on cardboard. In any case certain particulars should be recorded on a label corresponding with each egg (*not* gummed on the egg itself), such as species, date and locality of collection, position of nest, &c.

Should a complete *clutch* of eggs be deemed necessary, it is best, with the birds at all events (the starlings, hawks, crows, &c.) that mate for life, to remove one egg at a time and allow the hen to lay twice the usual number. In national collections, where things are done on a large scale, the whole nest is taken and preserved along with the full complement. For scientific purposes this wholesale robbery of our woodlands may be perfectly legitimate; for private collectors, however, having no other purpose to serve than to acquire a representative collection, with the accompaniment of much pleasant outdoor rambling, it should be tabooed.

It is this very tampering with the nest that has cost the birds so much time and labour and skill that has brought bird's nesting into such disrepute.

F. G. Aflalo.

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BISON AND BUFFALO — Bison and Buffalo form two very distinct groups of the great Ox tribe, so different from the more typical oxen, that by many writers they are severally assigned to two separate genera—**Bison** and **Bubalus**. All the members of the group are, however, so intimately connected that it seems preferable to include them in the typical genus **Bos**. Both the English names have, unfortunately, been applied to animals to which they do not belong, the American Bison in its native country being almost invariably termed the Buffalo, whereas by Anglo-Indian sportsmen the Indian Gaur is as generally spoken of as the Bison. Properly speaking, Bison include only the **European** and **American Bison**, whereas under the title of Buffalo are comprised the **Indian Buffalo**, the **Cape Buffalo**, and the Short-horned **West African Buffalo**, together with a small form from the Philippines, which is not improbably nothing more than a

hybrid between the Indian species and a small buffalo-like animal inhabiting the island of Celebes, known as the **Tamarao**.

The two species of Bison have their nearest relative in the Tibetan **Yak** (*Bos grunniens*,), which serves in some respects to connect them with the more typical oxen. An essential feature by which the Bison are allied to the Yak and the typical oxen is the possession of fourteen or fifteen pairs of ribs. Their horns, too—although smaller—have the cylindrical form of those of the Yak; but in the setting-on of these appendages Bison differ markedly from the latter. Not to enter into details on this point, it will suffice to state that Bison have their horns set lower down on the skull; while the skull itself—in addition to certain other features—is characterised by the marked convexity of the forehead and the tubular form of the sockets for the eyes. The external form of the Bison is too familiar to need much mention. The characteristic elevation of the withers—and the consequent lowness and apparent weakness of the hind-quarters—is the result of the great height of the spines projecting from the upper surface of the vertebræ of the fore part of the trunk. This elevation of the withers is enhanced by the mass of long hair clothing the fore-quarters, which also extends on to the neck, head, and fore-limbs. Elsewhere the hair—in the winter coat—is comparatively short and curly; and since in spring this coat is shed in large irregular patches Bison at this season present a peculiarly ragged and unprepossessing appearance.

The European, or True Bison (*Bos bonasus*)—frequently miscalled the **Aurochs**—appears to have been on the wane ever since the glacial period, soon after which it disappeared from the British Islands. As a wild animal, its range has been gradually contracting on the Continent, and now, apparently, it remains only in certain parts of the Caucasus—where it appears to be rare—and in a protected condition in the forest of Bielowitza, in the Government of Grono—the ancient Lithuania. There are, indeed, reports of its survival in parts of Wallachia and Moldavia, but these it is difficult to verify. A small herd is, it is true, kept by the Prince of Pless in Silesia, but this appears to be composed

YAK.

Height at shoulder 5 *ft.* 6 *in.*; *av. horn meas.* 31 *in.*; *max. horn meas.* 38¼ *in.*

of introduced animals, and has been replenished from Russia. In Bielowitza and the adjacent forest of Swisslotsch, the Bison have been steadily on the wane since the year 1857, when they numbered 1898 head, although the rate of decrease has been by no means regular, and has at some periods been accelerated by popular disturbances, disease, and other adventitious causes. Of late years the decrease in numbers has been very marked, the herds (inclusive of a small number confined in the Zoological Gardens at Bielowitza) having declined from 600 in 1882 to 380 in January, 1889, although by 1892 (since which date the numbers do not appear to have been published) it had again risen to 491. In-and-in breeding seems to be producing the usual results—namely, infertility on the part of the cows and the birth of an unusually large percentage of bulls; and it is only too probable that the term of existence of the Bison in Lithuania will be very limited. Information is lacking as to the prospects of the survival of the Bison in the Caucasus.

In place of being a forest-dwelling species, the nearly allied **American Bison** (*Bos americanus*) is—or rather was—a dweller on the open prairies, although a variety known locally as the "Wood-Buffalo" has accustomed itself to a different mode of life. The American species is so closely allied to the European that it is a somewhat difficult matter to define the points of distinction; although when the two animals are seen side by side, their points of difference are manifest enough. Although, on the whole, a more heavily built animal, the American Bison is less tall than the European species, with weaker hind-quarters; but the deficiency in height is largely veiled by the much more abundant hair on the head, neck, and fore-quarters.

The story of the practical extermination of the American Bison is told elsewhere, so that very few words must suffice on this occasion. The marvel is that an animal which existed in such countless thousands, and enjoyed such a vast geographical range—a range far greater than that of any other of the *Bovidæ*—should have been wiped out in such a short space of time. In 1869, when the Union-Pacific Railway was completed, the Bison still flourished almost in its original numbers. After the division of the animals into two great herds by the railway, the great period of the slaughter of the southern herd occurred between 1872 and 1874, and in the following year the herd, as such, had practically ceased to exist. Not but what numerous smaller herds remained for several years, although by 1880 Bison-shooting came to an end, for the very good reason that there were no animals to shoot. By the same date the northern herd had been decimated, and in the winter of 1882–83 it was reduced to a few straggling parties, all of which were soon after killed off, save for a small band which reached the Yellowstone Park, where they and their descendants have since received Government protection. These, and a certain number of the southern herd which fled to the wilder parts of Texas, were all that remained of the millions that formerly populated the prairies of the North-West.

Whereas Bison, as we have seen, have high withers, shaggy fore-quarters and heads, and cylindrical horns, the animals to which the name **Buffalo** should properly be restricted are characterised by the nearly uniform height of the back, the comparatively sparse coating of hair over the entire skin, and the more or less markedly triangular horns. So thin, indeed, is the hair in aged individuals, that in many instances the skin of the greater part of the body is almost completely bare. As further "points" of Buffalo, may be noticed the broad muzzle, the large, flapping ears—often heavily fringed with long bristly hair—the deep and short neck, and the moderately long and tufted tail. More important than all these features, is, however, the reduction in the number of pairs of ribs to thirteen. All the Buffaloes are old-world forms, as, indeed, are all the oxen, save the American Bison.

Although Buffalo form a well-defined group of the genus *Bos*, the differences existing between the various species are very much more accentuated than is the case with the Bison; the African species forming one section of the group, and the Oriental another. Of the former, the largest and best known is the **Cape Buffalo** (*Bos caffer*), whose typical range extends from the Cape to about the equator. Among the especial distinctive features of the typical form is the enormous development of the bases of the much-curved horns, which in old bulls form a huge mass covering the whole of the upper part of the forehead, and separated only by a narrow groove at their junction. Furnished with enormous, flapping ears, thickly fringed at their margins with hair, the head is remarkably short, with its profile deeply concave in the region of the eyes, and having a distinct hollow near the inner angle of each of the latter. Whereas in cows and young bulls the black skin is fairly well clothed with short dark brown hair, in old bulls it becomes almost completely naked. On the ears and tail-tip the hair, however, always persists. [*See* BUFFALO, CAPE.]

Such is the typical southern form of the Cape Buffalo. When, however, we cross the equator and proceed towards Abyssinia, an animal of a somewhat different type is met with. This is the *Bos centralis*, or *Bos æquinoctialis* of the older writers. In this form the whole build is much lighter and the size smaller, while the hair is lighter coloured and the horns have their bases much less thickened, and separated from each other by a median line of hair. Although some of these Abyssinian Buffaloes differ very markedly from the typical Cape form, yet in the

intermediate regions the two seem to intergrade so completely that it appears impossible to regard them in the light of anything more than varieties of a single very variable species.

Passing into Western Africa, we meet another somewhat small and lightly-built Buffalo, which, although showing considerable resemblances to some examples of the *Bos æquinoctialis*, is generally admitted to the rank of a distinct species, under the name of the **Red** or **Short-horned Buffalo** (*Bos pumilus*). The colour of the hair is generally some shade of reddish or yellowish, although occasionally showing a brownish tinge, and the horns, which are relatively small, are completely separated from one another in the middle line. Two races of this species have been described—the one from the Congo district, and the other from Sierra Leone and its neighbourhood. In the Congo race the upwardly-curved horns are very distinctly flattened at their base; and it is this race which approximates so closely to the so-called *Bos æquinoctialis* of Equatoria, and thus gives rise to the suspicion that the Short-horned Buffalo is, after all, nothing more than a highly aberrant modification of the Cape species. On the other hand, in the Sierra Leone, or north-western type, the horns show extremely little trace of basal flattening, and are very widely separated from one another on the forehead, while the direction of their curvature is different.

With the Oriental Buffaloes we come to a very distinct type, which probably includes only one true species. This is the **Indian Buffalo** (*Bos bubalus*), whose proper habitat is formed by the lofty grass jungles of certain parts of India and Ceylon. It is true that reputed wild Buffalo are found in Burma and the Malayan peninsula and islands, although it is probable that these are really descendants from animals originally introduced by man. Many of these feral races—as they are scientifically called—have become very much dwarfed in size, this being especially the case with those inhabiting Java.

The distinctive features most easily recognised in the Indian Buffalo—the *Arna* of the natives—are the length and comparative slenderness of the head, and the enormous dimensions attained by the widely-spreading horns, which are always separated from one another by an interval of great extent and show no trace of a basal expansion. They are, too, much more distinctly triangular throughout their length than are those of the African species, from which they also differ in their direction. There is a marked sexual difference in the direction taken by the horns, those of the females extending almost directly outwards from the head for a long distance, whereas those of the males curve upwards in a bold sweep immediately after rising from the forehead. Apparently, however, in the Assam race the horns of the bulls are directed much more outwardly than is elsewhere the case. Equally distinctive of the species are the smaller and more compact ears, of which the margins are devoid of a distinct fringe of hair. Although the usual colour of the sparse hair and skin is blackish-grey, a dun-coloured variety is found in parts of Assam.

In addition to being domesticated throughout the Oriental countries, the tame Indian Buffalo has been introduced into Asia Minor, Italy, and Egypt, where it appears to flourish as well as in its native home.—[*See* BUFFALO, INDIAN.]

A small sturdily-built Buffalo from Mindao in the Philippines, locally known as the **Tamarao**, has been described as a distinct species, under the name of *Bos mindorensis*. In colour it resembles the Indian species, with which it likewise agrees in its markedly triangular horns. Instead, however, of curving outwards and upwards, the horns are directed upwards, with a marked divergence, but with little or no curvature. The whole appearance of this diminutive animal—which is only about $3\frac{1}{2}$ feet in height—is strongly suggestive of its being a cross between the small Malayan race of the Indian Buffalo and the little **Anoa** of Celebes. That it breeds true at the present day, and thus forms a well-marked race, may be freely admitted; but its claims to rank as a valid species are doubtful in the extreme.

Although the **Anoa** (*Bos depressicornis*) of Celebes can scarcely be regarded as a true Buffalo, yet its affinities are clearly with that group. The upright direction of its horns, and other features, indicate, however, a decided approximation to the Antelopes. To a young Buffalo the Anoa presents a more decided resemblance than to the adult. The small size of this species (3 feet 3 inches at the withers) is in harmony with the small area of its habitat.

R. LYDEKKER.

BISON (*Bos americanus*)—The American Bison, like its European congener, is on the verge of extinction, and as a beast of the chase it has already practically vanished, though a dwindling remnant of the northern form may still occasionally yield a trophy to the sportsman hardy enough to brave the wintry desolation of Athabaska. A very few head are left in the Yellowstone National Park, but are being killed out by poachers. There are several small tame herds here and there; and there are one or two spots in the Rocky Mountains, and possibly one on the Mexican border, where two or three individuals still linger in a wild state. These are all.

Yet, fifteen years ago this was the characteristic animal of the plains, and still swarmed in the Upper Missouri Basin. It was hunted in two ways: by running it down on horseback, in which form of chase the heavy revolver was the weapon usually preferred, and by still-hunting,

or stalking, on foot. The last was the method by which the great slaughter of the herds was accomplished. The hunters used long-range rifles, Sharps being probably the favourite weapon. These rifles were usually of ·40 or ·45 calibre, with a long heavy bullet, backed by about 100 grains of powder; they were very accurate long-range weapons, and as the buffalo (as the bison were always miscalled) were slow and stupid animals, a good marksman and skilful hunter could often slaughter twenty or thirty at a "stand," as it was termed.

I never came in contact with buffalo myself until at the very end of its existence as a species, and shot only two; one an unusually large solitary bull on the Little Missouri in 1883, and the other a very fine herd bull in South-western Montana in 1889. The first I stumbled across, and slew out of hand, with one of the ordinary buffalo rifles. The second was procured only after very careful tracking through a mountain forest and was killed with a single bullet from my Winchester.

My brother was in at the death of the southern buffalo herds early in 1877 in North-western Texas. He had full experience of both kinds of chase. Running buffalo on horseback was by far the most exciting method of killing them. The secret of success consisted in racing at full speed from the very outset, since the buffalo, though not very fleet, possessed marvellous endurance; and in riding up almost within arm's length of the brute before firing. It is a very difficult thing to shoot with any accuracy from a horse running at full speed, and especially at another object going at a somewhat different rate of speed. If the shots are fired from any distance, they are apt to miss or only wound. The true method was to push right alongside and fire with the muzzle of the weapon but a couple of feet from the animal's back. It was important that the horse should be trained to sheer off as soon as the shot was fired, as the buffalo sometimes turned and charged with great fury. On a well-trained hunting pony there was little danger, for the buffalo had neither the pace nor agility of the horse. An untrained horse, however, was generally afraid to come to close quarters, and moreover turned clumsily. I know of one instance where riding a large untrained Eastern horse caused a hunter to lose his life, the buffalo making good his charge and inflicting fatal

BISON.

Height at shoulder 5 ft. 6 in.; av. horn meas. 16½ in.; max. horn meas. 20⅝ in.

injuries on both horse and rider. Even in this branch of the sport, however, accidents to life and limb from the quarry were not common, though there was no little risk from the falls naturally incident to riding at full speed over rough and broken country. It was a splendid sport, full of excitement, and it is melancholy to think that it is gone for ever.

Still-hunting the buffalo did not differ materially from still-hunting any other kind of game, except that it was rather easier when once the haunts of the bison were reached. Most game animals are adepts at concealing themselves, but the buffalo never sought concealment, and its huge black body could be seen against the yellow prairie as far as the eye could reach ; its sense of smell was very acute, but its eyesight was poor, and so stalking was easy. Occasionally the beast charged, but against heavy rifles in skilful hands his prowess availed nothing, and the danger was so inconsiderable, that with anything like proper caution it could be disregarded.

Pursuit by sportsmen had practically nothing to do with the extermination of the bison. It was killed by the hide hunters, red, white, and half-breed. The railways, as they were built, hastened its destruction, for they gave means for transporting the heavy robes to market ; but it would have been killed out anyhow, even were there no railroads in existence, and, once the demand for the robe became known to the Indians, they were certain to exterminate it in time, even had the white hunter refrained. Not even in South Africa has there been an instance where so many large game beasts of one species have been slain within so short a time. Originally the bison ranged between the Rocky Mountains and the Alleghanies and from Mexico to the Peace River ; but its centre of abundance was the vast stretch of grass land reaching from the Saskatchewan to the Rio Grande. All the earlier explorers who crossed these great plains, from Lewis and Clark and Pike onward, dwelt upon the astounding multitudes of the bison, who furnished the entire means of subsistence for the tribes of Horse Indians. The herds were pressed steadily back, but the period of greatest slaughter did not begin until after the Civil War ; then the commercial value of the robes became fully recognised, and the Trans-Continental Railways rendered the hunting-grounds more accessible. The slaughter was almost incredible, for the buffalo were slain literally by millions every year. They were exterminated first from Canada and from the Southern plains ; it was not until 1883 that the last herd was killed from the Great Northwestern plains ; and when the fierce greed of the skin hunter and skin buyer had exterminated the last of these great herds, there passed away what was perhaps the most imposing feature of American wilderness life.

THEODORE ROOSEVELT.

BITTERN (*Botaurus minor*), though only shot in this country by collectors, is in some favour with gunners in the neighbourhood of North American swamps, where it is found to lie well to dogs. [*See* WILD BIRDS' PROTECTION.]

BLACK GAME (*Tetrao tetrix*)—British sportsmen are generally alive to counteract, if possible, any danger which may threaten the extinction of a creature of the chase in which they take special interest. This, we are happy to think, has been the case with the black grouse, for there is not the slightest doubt that, on the whole, there has been a marked increase in their numbers since the agitation occurred in their favour a few years ago. Nowadays the gray hens are seldom shot, save by accident ; and though the birds have vanished from many of their old haunts, there are now in Scotland, their chief home, an equal number of fresh districts in which they have become more or less plentiful. Close observation tells us that the gray hen breeds for two or three seasons only, after which she becomes barren and useless ; and the introduction of square mouthed drains on moor edges accounts for the destruction of a large percentage of young birds.

Distribution—The best districts in Scotland for black game are Dumfriesshire, Roxburgh, parts of Perthshire, Invernesshire, Ayrshire, Aberdeenshire, and Argyllshire. In England they are numerous in the counties of Westmoreland, Cumberland, and Northumberland, whilst good bags are occasionally still obtained in Somersetshire ; and until very recently the birds have been killed in every county from Cornwall to Caithness. In Wolmer, the New Forest, and Staffordshire, black game were formerly plentiful, but are now practically extinct. Re-introduction is, in their case, a failure ; for the repeated efforts to re-establish the species in Norfolk, the New Forest, Wolmer Forest, and Ireland have met with no success.

Habits—Black game love the rough and broken country bordering cultivated and arable land. Though wandering in early autumn far out into the open moors, the first breath of winter sends them to their true home amongst the deep heather and rough grass lying beneath the birch and fir woods. From this cover they emerge in early morning and in the evening in search of their food supply, which, to such omnivorous feeders, practically comprises everything in the shape of grain, seeds, fruit and insect life that the various seasons afford. As the winter comes on, and the birch buds, a favourite food of theirs, give out, they will sometimes take to the Scotch firs and devour the youngest shoots, but will not do so unless driven to it by stress of weather. A lack of food supply frequently causes vast migrations of these birds in Norway, Sweden, and Russia ; but in our islands, a movement on their part

Black Game

is uncommon except for short distances, and then only confined to individuals and small parties.

The first signs of spring awake the martial instincts of the black cock. By nature, he is a warrior, and those who have watched him in his spring battles cannot fail to have the greatest affection for him, for he is such a veritable *preux chevalier* and settles his little differences so like a gentleman. By the end of March, the black cocks come regularly adorned to their playing-ground, generally an open space of short green grass on the fringe of the moor. The noise made by the birds, each of which selects a station some fifteen or twenty paces from his neighbour, can be heard on a still frosty morning at a distance of nearly two miles; it is a gentle purring sound not unlike the word "whirroo." At intervals too, the black cocks, particularly if a gray hen has been observed near the battle-ground, set up a loud screeching noise not unlike cats fighting at night. In April, when the gray hens begin to come regularly to the lists, there to be fought for and appropriated, the black cock who first observes a possible spouse approaching, throws himself up in the air and flutters up perpendicularly like a lark to a height of twenty or thirty feet. His example is immediately followed by all the other black cocks who, each and all, endeavour to screech the loudest to attract her attention. Black cocks fight long and savagely, often till one or other of the combatants is disabled, though, as with our species, there is a good deal of talk before they begin. No immature cock is allowed to enter the ring. On fine days, in late autumn, black cocks frequently go through their spring pantomime, exhibiting many of their previous antics and calls, but this exhibition is but a subdued version.

By the middle of May, the gray hen has formed a nest of loose dry grass, and in it she deposits her eight or ten eggs, the first brood being seen generally about the beginning of June. Though the gray hen is an excellent mother, the young are extremely delicate and more than half, as a rule, fall victims to various causes. When the chicks are no larger than thrushes, they can fly well, and, if flushed, will readily alight in the trees, where, by the way, the mother generally takes them to roost for safety's sake.

With the moulting of his glorious plumage, the black cock's fiery nature vanishes; he becomes shy, and spends much of his time, with a few companions, hiding in the thick bracken; and as the autumn advances, the regular winter parties are formed. The breeding hens and young of both sexes go together in small or large numbers, whilst the old black cocks form a separate pack or party, sometimes numbering as many as three hundred, as the writer has seen at Doune, in Perthshire. The barren hen, like the emancipated woman, goes on her own, though it does not, of the least necessity, follow that the single hens which are so noticeable in covert shooting are unfertile.

Shooting—The flight of black game is very rapid when they are once under way, about the same as that of grouse, but performed with greater ease and less scurry, and capable of being extended to a much greater distance. The law permits shooters to butcher black game as early as August 20th, but no one who is anything of a shot or has any appreciation for the beauties of nature should ever kill his birds before the middle of September, unless they are actually wanted for the pot. Till this time, when walked up, they are neither an attractive nor difficult mark, whereas, if driven later on, they fulfil every necessary qualification of a high class bird of the chase.

Driving—When driving, it is well to remember that black game are not too easy to kill; their pace is slightly deceptive, and it is best therefore to take both one's shots in front if possible: the gunner too must be well on the alert to observe their approach, as they are so silent when coming forward, and he must be ready to shoot very smartly in case they resort to the dodging header, a ruse they often attempt if frequently driven.

Black game are as obstinate as government mules when they do not wish to go. With a few trained beaters, a good keeper who knows their lines of flight and passes will put them to the guns better than an army of irregulars. Lying in the stooks in an October evening is capital sport, and a few old black cocks shot as they come in to feed afford almost as much fun as duck, shot during flighting. Dull misty weather is the best for black game shooting, as the birds go straight ahead, and do not get into large packs coming on all at once.

There is very little poaching of these birds in Scotland beyond snaring on the stooks, but in England silk net is used to some extent in the border counties. Their strength, speed, and fine sight, too, gives them a fair immunity from the attacks of vermin, the Peregrine alone stooping and killing one occasionally; and then but for sport, for their flesh is not esteemed by the raptorials. A black cock makes a charming pet and becomes very tame, and his attitudes in the spring are interesting and amusing to watch.

Black game have been known to interbreed with Capercailzies, Pheasants, Grouse, Willow-grouse, Bantam, and common Fowl, the hybrids usually being very dark and taking after the black cock, whose progeny they generally are. As with most hybrids, the young are generally males, the most frequent cross being that with the Capercailzie, which may be said to be almost common. Gray hens too, not infre-

quently, partially assume the plumage of the male. Whole or partial albinos are extremely rare. [*See also* GROUSE.]

J. G. MILLAIS.

BLACKCOCK TOURNAMENTS—A custom prevails in Russia of shooting the male birds of the black-game family during the mating season, a practice excused by northern sportsmen on the ground that the males of this species greatly exceed in numbers the female birds, and that, in their rivalry for the latter's favours, the cocks destroy numerous sittings of eggs by fighting over the very nest. Those who know the blackcock only in the broad light of day may be surprised to learn that in the early hours of a spring morning—from about 2.30 a.m. until sunrise—these birds hold what is to all intents and purposes a tournament in some selected clearing between the forests, or in convenient belts of open woodland. Hither flock the gray hens from their nests, each one watching from bush or tree on the borders of the lists, and flying off anon with her victorious knight.

In the lists, however, the blackcock rarely comes to blows, though serious fights are said to take place afterwards over the nests of the fair.

In order to discover the chosen tourney-ground of the sable warriors, it is essential to pass a night or two in the forest, a function generally performed by the keeper, who may hear from a mile away the hectoring and crooning of the combatants, and will then creep to the edge of their battlefield in order that he may select the exact site for his pine-bough shelter (*Russicè, Shalashka*) in which the sportsman is destined afterwards to crouch. The pine branches are placed end-up in a circle, their tops converging to a point, the base enclosing a space about five or six feet in diameter.

Within this space, shortly after midnight, the sportsman takes up his position and waits until, with the earliest indications of coming dawn, the black-plumed champions arrive one by one with a rush and a whirr through the darkness, and alight unseen with a thud close to his ambush, the site of which the keeper has chosen with care. Presently a great crooning arises from many throats, growing in volume until the sound becomes absolutely oppressive. Suddenly, a champion issues his challenge: *chu-wish! chu-wish!* and in an instant the defiance is taken up from every side. The knights close in to the fray, and the bloodless tournament commences, each pair fighting, or pretending to fight, like any two pugnacious barndoor cocks in a farmyard.

It is then that the sportsman may, when the light becomes strong enough, shoot many times without clearing the field, the spectacle of slaughtered companions neither alarming nor even, to all appearance, surprising the survivors.

No sooner, however, does the blazing forehead of the rising sun appear, than all hasten from the lists, and the sportsman should remain concealed until the very last bird has disappeared, otherwise his ambush will not avail him a second night.

FRED WHISHAW.

BLACK FISH—(1) An American sea-fish, also known as Tautog, caught in the autumn months near sunken wreckage. (2) An Australian fish occurring in both river and sea, and caught with rod and line, the only bait being a weed that grows on the local wharves. It is of no use as food.

BLUE FISH (*Pomatomus*)—A game sea-fish of the Eastern seaboard of the United States, caught in large numbers by railing under canvas with any bright spinning tackle.

[BLUES, *see* UNIVERSITY CONTESTS].

BOAR, WILD—Luckily for hunters as a class, the range of the wild boar (*Sus scrofa*) is almost world-wide. On the American Continent, indeed, he has no place, although in Old Mexico, and it is said as far north as Arizona, he is represented by a small variety of his race known as the *Peccary* (*q.v.*), which though neither as large nor as well armed as the true wild boar, has some of the attributes of that grand beast and (making due allowance for western exaggeration) must be endowed with very considerable pluck and pugnacity. Another distant cousin of the true wild swine has his haunt in South Africa, where he is known as the *Wart Hog* (*q.v.*), a beast furnished by nature with tusks alongside of which the record tusks of Indian or Caucasian boars would look utterly insignificant; but occurring as he does in a country where there is such a prodigality of the more important great game, little is known of him as a sporting beast, and none but casual notice of him occurs in most of the African works on sport. From these, however, he appears to possess some of the pace and his share of the pluck and fighting qualities of his race. W. C. Baldwin, for instance, in his *African Hunting*, mentions, in passing, that his big staghound "Hopeful" was carried bodily away on the points of a wounded wild boar's tusks for full fourteen yards.

But the true Wild Boar is *Sus scrofa*, and though he is found in Northern Africa, in the Hawaiian and most of the South Sea Islands, and in other somewhat unexpected places, his true home is in India and Europe.

In very early days wild swine were plentiful in England, and Mr. J. E. Harting, in his *Extinct British Animals*, writes that "to judge of the remains of the animal which have been found in various parts of the British Islands, Wild Boars at one time must have completely overrun the country. In Ireland they were even more plentiful than in England, though small and misshapen, and in Scotland also they were abundant.

They grew to such a size that we have a record of one pair of tusks taken about 1124 which measured 12 inches in length and three in their greatest width. But the wild boar, like a good many better things in England, has had to make room for civilisation, and though his admirers have made several efforts to re-establish him in his old haunts, their efforts have been in vain." Public opinion, which will hardly tolerate the existence of a rabbit, rises in indignation against the wild boar, whose ideas on farming are certainly peculiar. It is of course impossible to fix the exact date at which any given animal became extinct in England, but from documents quoted by Mr. Harting it may fairly be assumed that there were wild boar in abundance in the forests round London in 1174: that the King and Prince of Wales hunted them near Windsor in September, 1617: that in that year boar were still to be found in Lancashire, and that almost at the end of the century (1683) wild swine still existed in England.

In France they exist still, and in Germany, Austria, Russia, and Spain they are plentiful, and still form a prominent feature in the great game drives of those countries.

From Europe eastward, the tracks of the wild swine are by every sluggish stream, his lair in every reed-bed, and his routings the ruin of every peasant's crops. From the Black Sea to the Bay of Bengal there is a ringing of bells by night, a blowing of horns and sounding of clappers, together with an irregular musketry fire all through the ripening time of the grain, and all this in honour of the great wild boar, who as soon as the dusk comes, steals out from the wooded foot-hills or the stony gorges, and trots down to the cultivated grounds to dine.

And the boar deserves all honour. He was England's noblest beast of chase in England's manliest days; and in England's great schooling-ground for soldiers to-day, what beast is his equal? Let some of the men who know him speak. In the *Wild Sports of India*, Major Shakespear says, "I consider that hog-hunting is the very first sport in the world." Col. Heber Percy in the Badminton volumes calls the boar "the pluckiest of all beasts," while Col. Kinloch, in his *Large Game Shooting in Thibet*, endorses both these opinions.

Undoubtedly, if the boar has his due, he must take high rank amongst the beasts of the chase. It is even doubtful if he be not entitled to take the first place. For courage, he has no superior: it is much to say that he has any equal. I have myself seen a comparatively small boar fight his way through a pack of hounds; I have seen a broken-backed sow worry a dog nearly as large as herself; I have known a mortally wounded boar to lie in ambush for his enemy and kill him just before the dawn came and his own life was spent, while Major Shakespear (in the *Wild Sports of India*) writes of the boar's "utter recklessness of life" and of the "fierceness that will make him run up the hunter's spear, which has passed through his vitals, until he buries his tusk in the body of the horse," &c. And again, the native Shikarees affirm "that the wild boar (of India) will quench his thirst at the river between two tigers." This is even more strongly put by Col. Heber Percy, who writes in the Badminton volumes on Big Game that several cases are on record in which an old boar has beaten off a tiger, and some in which the latter has been killed by a boar. As a matter of fact the old wild boar knows no fear, and whenever he does condescend to trot away from an intruding sportsman, he goes somewhat leisurely, under protest, and with an exceedingly savage gleam in his eye, plainly hinting that he would rather stop and fight, than get up and run. And in this estimate of the boar's courage both ancient and modern authorities are agreed, from Holinshed, who speaks of boar-hunting as "a verie dangerous exercise," to Col. Kinloch (*Large Game Shooting in Thibet*) who proved that it was so by "about fifty wounds from one boar" in a single round. Nor is the boar's courage his only claim to high rank amongst beasts of the chase. He has not only courage but pace, and in India offers to the sportsman that perfection of sport known as pig-sticking, in which riding, racing, hunting, and fighting are so happily blended, that even an Irishman would be content with its glorious opportunities for fun and sudden death.

Naturally, with all these good qualities, English sportsmen delight in killing him, and have surrounded his obsequies with many rules and much ceremony. In India it is a maxim that the only sportsmanlike way of killing him is with a spear: it is a law that no boars shall be shot within forty miles of rideable ground. And to the average Englishman these laws and customs will at once appear to be founded on right reason. There is probably more danger in pig-sticking than in any other form of sport. The ground over which the riding has to be done is as little adapted to riding as it well could be; nothing annoys an old boar more than to be hustled at top pace before he has had time to digest his food; a spear is infinitely more difficult to kill with than a rifle; and if the hunter is in real luck, an angry boar may give him fifty wounds in five minutes that take nearly forty minutes to sew up and dress; a sow may run up his spear and fasten on his horse's chest, or at any rate his horse will be so knocked about by the rocks amongst which he has ridden, that he won't be able to go out of the stable again for a fortnight. Hence it comes that hog-hunting is the most popular sport in India, and for those anxious to study it in all its details, numerous volumes have been written.

Here it must suffice to say that the boars are either intercepted in the early morning on their

way from their feeding-grounds to their lairs in the foot-hills, or are driven from their lairs by beaters. Along the edges of the covert, horsemen armed with spears are stationed in dumb expectancy until the boar breaks. Then the signal to ride is given, and such as are within reasonable distance of the quarry, lay into their boar, press him as hard as their horses can before he has time to get his wind or gain covert, and despatch him, if they are lucky enough to get within range of him, by spear thrusts, delivered from the saddle, the honours used both on foot and on horseback; and in Hawaii, where they claim an indigenous pig and good rideable country, it is used to-day. In Britain it would seem from certain paintings and written records which have been preserved to us that the boar was not ridden down in the open as in India, but was first driven to bay by hounds and then killed with a heavy jobbing spear, a sufficiently dangerous pastime even so, as is in some sort proved by the records of lands granted to certain gentlemen and corporations by the King for the destruction of notable boars

BOAR.

Ht. at shoulder, 35 *in.* *Av. length of tusk*, 8 *in.* *Max. length*, 12 *in.*

of the run going to the man who draws first blood, or, as they say, takes the first spear, although it is by no means probable that the first spear will finish the business. On the contrary a good boar is likely to give employment to most of those engaged before he dies. The spear used in this sport varies in the different districts from six and a half to seven feet long in Bengal, to eight or nine feet in the Bombay Presidency. [*See* PIG-STICKING.]

There would seem at all times and in all countries to have been a remarkable consensus of opinion as to the propriety of killing wild swine with a spear. Formerly in Britain it was which had committed great depredations, and by a curious clause, quoted by Mr. Harting from the *Book of the Rights and Privileges of the Kings of Erin*, which restrains one of the kings of Ulster from going into the wild boar's hunt or "being seen to attack it alone." One cannot help wondering whether, being Irish, that good king did not avail himself of the companionship of courtiers who were discreetly blind upon occasion. In Spain, in the old days (according to Mr. Abel Chapman), the "javato" was hunted on horseback with spear, pike, and lance, and even now in Estremadura is hunted with horse and hound "during the

stillness of a moonlight night when the acorns are falling from the oaks in the magnificent Estremenian woods."

But there are many places where the boar cannot be ridden down even by Englishmen, places where no horse could gallop, and in these the boar gives very fair sport with the rifle, either to the stalker or the leather-lunged sportsman who with a small pack of hounds (three or four) drives him to bay in such mountain fastnesses as may be found on the shores of the Black Sea, or through such forest tangles as abound on the Caspian. In Russia, as I believe in Austria and Germany, the wild swine are shot in the great forest drives, but though they form a fine picture crashing through the frosted undergrowth, it is a poor way of killing them. The Caucasian peasants' methods are better. Like most other forest beasts, the boar is more or less nocturnal in his habits; and it is in the stillness of the night that those who watch learn most about him. When the moon is up and the pears are down, in August, the natives sally out with their old muzzle-loaders and catch the boar feeding under the pear trees, or with a white string knotted round their gun's muzzle for a sight, lie in wait by his path through the reeds to the water. Many of the guns used are poor things, the bullets and charges both light, the shooting inaccurate, and the light bad, and as in addition to this the boar's hide is at certain seasons almost impenetrable in places, this hunting is dangerous work. Not a few of the old Cossacks who indulge in it are badly scarred, and as for their hounds, unless they develop a phenomenal degree of caution and activity early in life, their careers are short.

Appearance and Habits.—Throughout his wide range, the wild boar varies little in habits, size, or appearance. As a youngster, he is of a reddish-brown striped with darker colour; as he grows older, he loses the stripes: and as an old warrantable boar, he becomes a grizzled grey with an undercoat of black. As far as my own knowledge of him goes in the Caucasus and Russia, he is at all times a clean feeder, living upon roots, chestnuts, acorns, and the different fruits and crops, but some authorities maintain that he will devour a carcass if he comes across it. Night is his feeding time. In the day-time, he lies up in thick scrub, generally near some soft ground in which he can wallow, and not necessarily near his feeding ground, for he is a great traveller.

Measurements and Weight—In weight and size he varies perhaps more than in any other particular, and from such data as I have been able to obtain I should imagine that the Caucasian boar, amply fed upon the fallen chestnuts and maize-fields by the Black Sea, is perhaps the largest of his race. Professor Radde, of the Tiflis Museum, once wrote to me as follows: "The largest solitary boars, measured at the shoulder, and measured straight, stand about 105 centimetres, and their total weight, not dressed, rarely exceeds 15 puds (*i.e.*, 600 lbs.)." In India, on the authority of Captain Baldwin, Major Shakespear, and others, we have it that a boar which stands 40 inches high at the shoulder has attained to the maximum size of his race. In Hawaii, I have a record of a boar killed and weighed by my friend Mr. Purvis, which *dressed* 325 lbs., and judging (at hazard) from the records of certain tusks taken, the old English wild boar was not far behind the Caucasian beast.

Captain Baldwin, a very careful writer, gives the measurement of a boar killed by him in the Himalayas as five feet ten inches in length and over three feet at the shoulder, but adds that boar in the Himalayas frequently exceed this.

Tusks—As to the size of tusks, the principal trophies of the boar, Baldwin writes that "the tusks of a very fine Indian boar sometimes reach eight and a half and nine inches in length, but anything above this is exceptional;" whilst in Mr. Rowland Ward's book on Horn Measurements a pair of 10 inch tusks, secured by Sir Samuel Baker in India, are the largest recorded.

I have reason to believe that larger tusks than these have been taken in Hawaii, and I have myself measured a pair in the possession of a Caucasian Governor (Col. Verubof of Naltchik) which went 11½ inches round the outside curve. Certainly 9 inch tusks, and even 10, are not uncommon there; and I have myself secured a pair not unduly curved, well over 9½ inches. When the upper tusk has been lost by accident, it not unfrequently happens that an abnormal growth takes place, the lower, or fighting, tusk growing round and so attaining greater length, whilst it becomes useless as a weapon.

But perhaps there is no tusk on record at present to surpass those recorded by Boethius as taken from a boar killed in Scotland 1124 (or thereabouts), twelve inches long and three in their greatest width.

CLIVE PHILLIPPS-WOLLEY.

BOAR SHOOTING—In considering the pursuit of the boar with the rifle on foot instead of with horse and spear, according to the orthodox fashion, it must be borne in mind that there are large tracts of forest in India swarming with pig that are absolutely unrideable from a pig-sticking point of view. These are so remote from ground on which that grand sport may be obtained that it cannot even be contended that they act as nurseries to maintain the supply of pig for the rideable districts. In these forests, Indian though they be, wild boar are perfectly fair game for the rifle.

In all forest-stalking it is hopeless to hunt in the middle of the day; the animals are then lying down, and if stumbled upon by accident, a rush

through the scrub and a confused vision of vanishing sterns offer the sole chance of a shot. Early in the morning it is very different. The hunter, moving slowly and noiselessly in his india-rubber or felt-soled boots, either catches sight of a sounder feeding on some grassy glade, or hears them rooting among the bamboos at the bottom of a ravine ; sometimes he will intercept an old gray hog returning from his night's foray among the crops in the jungle clearings, or catch the sharp clashing sound of a heavy boar whetting his tusks, and be able to creep up within easy range for a shot.

The unparalleled courage and ferocity of wild boar are referred to in the foregoing article. Still, it is only fair to admit that a boar will rarely attack unless something has occurred to ruffle its proverbially short temper. The writer, riding on one occasion unarmed over some open downs in Central India, espied a goodly boar making his way home after its night's ramble, and he trotted up to within about forty yards of it. The boar stood still and chucked up its chin defiantly. There was nothing more to be done ; it was folly to risk a charge with only a switch to protect the horse ; so each party drew off.

BOAR SHOOTING.

Weapon, &c.—It may here be observed that a ball gun of the Paradox type is about the best weapon to use. Express bullets are too apt to glance from twigs to be absolutely reliable in forest shooting, and the writer has lost several beasts from this cause. Small-bore bullets also often leave no blood trail, and wounded animals are frequently lost through this defect in forest shooting.

The chief element of risk in boar shooting is having to follow up a wounded beast in thick covert. The main rules to be remembered in such an event are—to avoid approaching any dangerous animal up hill, and not to be in a hurry, but to give time for the wound to tell on the animal's strength.

Another time, when after other game with a brother officer and two hunters, the sound of a boar whetting its tusks was heard ; and on the party advancing in the direction of the noise, a sounder of pig was disturbed. The old sow and her family made off at once through the grass, but the boar came trotting back as if to cover their retreat. As it was essential for sport not to disturb the ground by unnecessary firing, no notice was taken of him, and he presently followed the others. The party had not, however, proceeded another twenty yards when the veteran came back again and barred the way with such evident malevolence that the sportsmen had to cock their rifles

and place the natives behind them in case of attack.

It was rather a curious sight ; on one side of a grassy glade stood four men, two of them armed with rifles, and on the other stood the huge old boar, almost white from age, shaking his head and daring them to come on.

The utter unreasonableness of the whole affair was too ludicrous. The men had not the smallest intention of hurting him, except in self-defence ; and if he declared war and charged across that open glade up to the muzzles of two rifles, the only possible result would have been his death.

At last the old fellow seemed to make up his mind either that he had asserted his own authority, or that the enemy were too strong for him, and trotted off again ; but on the party resuming their advance he at once turned and faced them a third time, but only for a few seconds, when, considering he had wasted enough time over them, he trotted off and rejoined his family.

Another rather absurd adventure befell the writer once when, intent on procuring pork for the larder, he had carefully selected a promising squeaker out of a sounder that were feeding among some bamboos at the bottom of a steep ravine. After shooting his selection through the head, so as not to spoil the meat, he clambered down to inspect his prize. He had barely time to examine it when there was a crash among the bamboos, and the long lean head of an evil-looking pig appeared, facing him, some ten yards off. There was no time to deliberate. The bottom of the ravine, where the writer was standing, was barely two feet wide ; the sides were steep, and it was certainly no place to stand a charge, while avoiding one seemed out of the question. So a quick shot, which placed the bullet between those fierce little eyes, had to settle the matter. It was the old sow, unfortunately ; but the place was too tight for careful discrimination.

R. Heber Percy.

BOWLS—If this ancient and historic game did not originate in England, it must have been introduced not long after the Norman conquest. Strutt, after all his researches, could only say that it was probably an invention of the middle ages, confessing his inability to ascertain the time of its introduction, but he traced it back to the thirteenth century, and in his *Sports and Pastimes* gives a copy of the earliest pictorial representation he had found. The original may now be seen in the British Museum in a MS. (20 D. IV. p. 187) in the Royal Library. It is a well-preserved coloured drawing and shows two players and two bowls and two small cones, one of the latter being placed at either side of the playing ground and evidently serving as alternate marks to bowl at. By the fourteenth century the cones had been superseded by a single small bowl, now and for ages past called "jack," as the object played at, for in a spirited drawing of that period, also copied by Strutt, we find three players with three bowls and a jack. Nowadays each player uses two or more bowls, and, allowing for changes in costume and more numerous players, the game seems to have been played in much the same way then as now.

Abundant records of the intervening centuries show the position held by the game in public estimation. During the sixteenth and seventeenth centuries and the early part of the eighteenth, it was in great favour with royalty, the nobility, clergy and the well-to-do, but after Queen Anne's time a reaction set in, which continued down to our own day. Of recent years, however, the game has experienced a great revival, and now bids fair to attain and hold the high position it deserves as a gentle and healthful recreation.

The game was established in England long before its introduction into Scotland, where the practice of it has been modified and differs in many important respects, though the main principles and objects of play remain the same. [*See* Bowls, Scottish.] It is played upon what are called "bowling greens," grass plots of varying extent usually taking the form of a square or oblong with a width or length of from 40 to 60 yards. Such a space affords ample scope for play, a stretch of 35 or 40 yards from "trig" to "jack" being quite enough to play over, if nicety of play is to be regarded and fatigue avoided. The trig (or "footer") is an essential implement in the game, and the starting point of all play. It is usually a piece of leather or matting about 18 in. square, upon which the leading or first player places one foot when throwing off jack, which he must do to a distance of 20 yards at least, but not nearer than a yard to the edge of the green. If the first throw fails he is allowed a second, but failing again, his opponent is entitled to one throw, and if he also fail, the throw reverts back to the first player, but the order of play is not interfered with by such failures.

The jack is sometimes made of ivory, but commonly of wood or earthenware, and is from $2\frac{1}{2}$ in. to 4 in. in diameter. On some greens biassed jacks are still used, but earthenware straight-running ones are superseding them. The bowls (of which each player uses two in ordinary English play) are of globular form and much larger and heavier than the jack. They are made of *lignum vitæ* or other hard and heavy wood, and vary in size and weight ; the largest seldom exceeds in circumference the Scotch limit of $16\frac{1}{2}$ in. and the average weight is about 3 lbs., but there is no *minimum* limit of size. The most peculiar and interesting feature in bowl-playing is that the

bowls are purposely made with a "bias," i.e., a tendency to diverge from the straight line when set running. Every bowl is practically round in the largest circumference or running part, but is shaved down very carefully and evenly on one side by the turning lathe, the effect being to cause the bowl when slackening speed to incline and turn (or draw) towards the reduced side, the divergence corresponding in intensity to the amount shaved off. Formerly the bias was brought about by inserting lead on one side of the bowl, but not so now. Perfectly straight-running bowls are not allowed, so that the player has, in sending a bowl on its journey, to allow for this created bias, the distance to jack, and the amount of force necessary to accomplish the object of his play. Inequalities in the surface of the green must also be taken into account, otherwise elevations, depressions, or slopes will inevitably tell tale by impeding the bowl or carrying it out of the contemplated course.

The usual complement of players in the English game is six, who divide into two sides of three either by choice or by drawing lots. Each side agrees upon one of their number to lead or play first, and we may call him No. 1 : he is supposed to be the weakest player and is followed by the medium player as No. 2, the rear being brought up by the most experienced and skilful player, No. 3. Nos. 1 on each side toss to see which shall lead, and the game commences by the winner throwing jack within the prescribed limits, and when it has come to rest and is in all respects a valid mark he proceeds to play one of his bowls and is followed by No. 1 of the opposing side with one of his ; they play their second balls in the same order and Nos. 2 and 3 on either side alternately so continue the play until all the twelve bowls are played, when an "end" is said to be finished, and the side owning the bowl lying nearest jack are said to have the "cast," which reckons one point in the score and they are allowed another point for every additional bowl of theirs which lies nearer jack than any bowl of their opponents.

The number of available players of course varies. Two may play, opposing each other in what is called "single-handed" play, or four can play, two on each side, after the same manner that six do, but the play single-handed or two of a side being more continuous and involving frequent crossing of the green is apt to become fatiguing, especially in warm weather. If more than six play in a set, the ground in the neighbourhood of jack becomes so encumbered with bowls that the hindmost players have few openings left for their skill, and their enjoyment is correspondingly lessened.

The game does not consist merely in playing the bowls so as to rest as near jack as possible in unobstructed ground, for second or third player often finds his course obstructed by the bowls already played and that his own can only approach by passing, sliding from, or removing one or more of them, whilst third player has additional responsibility, the final result of the "end" depending on his play. He is generally equal to the occasion and by a well-played bowl insinuates his own or a partner's into a winning position or "saves something." His only resource often is "firing" (playing with much force) at jack or bowls or both, either to send jack off the green and so "void" the end altogether, or to scatter the bowls to drive away his opponents or let in one of his partners. Leading players should never be "short," i.e., by playing their bowls so as to stop short of jack ; to go beyond it is better, as the jack can be driven to them if desired ; the second players should play "well up" unless it is advisable to "block" the ground against the opponents in order to maintain a favourable position.

It is most important that the beginner should adopt a good position and attitude for delivering his bowls. If a right-handed player, he should place his right foot firmly on trig, then advance the left about a yard, and, bending the left leg and stooping, bring his body down nearly parallel with the green, leaving just sufficient space to swing his right arm with the bowl in hand clear of the grass, so that the bowl may glide from the hand and strike the turf at the slightest possible angle, the nearer trig the better. In this position the player has complete command of the bowl, and his eye can detect any unevenness in the ground requiring allowances. A left-handed player places left foot on trig, and advances the right in the same manner. A right-handed player naturally plays on the right-hand ground, that is, to the right of an imaginary line drawn from trig to jack, and ought to play both bowls on that ground unless blocked by other bowls, when he should "change his ground" by playing to the left of the line. It becomes necessary to change the ground in many cases. For instance your opponents may have a "short" bowl lying a little to the right of jack, and, should your bowl touch it, it may be driven nearer to jack ; in such a case you play on the left-hand ground. This changing the ground is necessitated by a variety of circumstances too numerous to specify. In play the bowl should be firmly grasped in the hand, in right-handed play the little finger resting near the biassed side and the thumb on the other side, which is called "playing finger." If the player decides to change his ground he turns the bowl in his hand and plays with the thumb on the biassed side, and this is called "playing thumb." Beginners often feel a difficulty in playing on both sides, but should never give way to the natural inclination to play only on one side ; there never was a good player who did. Occasionally the green is so encumbered with bowls on both sides of the imaginary line

that to succeed it is necessary to reduce the natural curve caused by the bias, and this may be done either by playing with extra force, or by "setting up" the bowl so that its circumference inclines a bit to one side or the other, a manœuvre in which some players excel.

On the completion of each "end" the players cross over and a fresh one is entered upon by the winning leader throwing jack again from trig, which is placed within one yard of the spot from which jack was taken up in the completed end; the bowls are played as before and ends succeed each other until one or other side scores seven or any agreed number of points for game.

England has not yet a national or central association of bowling clubs, and consequently there is no uniform standard of playing rules applicable to the whole kingdom, though there are local associations of clubs in Lancashire, Yorkshire, Durham, Norfolk, Suffolk and elsewhere which have framed sets of rules for their respective districts. In these and other parts many clubs exist and flourish independently under their own sets of rules, but scarcely any two of them are alike in all respects. In Scotland, however, the Scottish Bowling Association has provided a set of rules which are generally acted on throughout the country. Scotland has about 35,000 players and 400 greens, with district associations for Edinburgh, Leith, Glasgow, Midlothian, &c. The number of English clubs is unknown, but there are several hundreds of them. They are very numerous in Newcastle, Manchester, Lancashire, Yorkshire and Norfolk, and the colleges at Oxford and Cambridge have several.

The English greens are not usually so level as the Scottish, and several sets may cross each other's lines of play, so that great variety may always be had owing to the constant shifting of the play and the inequalities of the green. English players use only two bowls apiece except in the more northern districts, where three or even four are sometimes allowed. In their club matches a team of twelve players is selected and divided into four sides of three each, and in matches independent of the associations the contest is usually in two parts, the first taking place on the green of the challenged club, the second on that of the challengers. The visitors, of course, have to find out as best they can the peculiarities of each green and must be skilful to win both out and home. If each club gets a win a deciding match is played on a neutral green. In Lancashire, however, there are never more than two of a side, and their matches are usually played single-handed, the points gained by each player being added to those gained by the other players of his party, and the club making in all the highest total of points wins. Every club has its own prize meetings and the associations promote contests between clubs and single-handed tournaments for individual merit open to all members. The players are generally attended by lads, who pick and clean the bowls for them, receiving 1d. each evening from every player; in this way the players are saved much time and trouble and their attention is not distracted from the game by doing the work themselves. Some clubs, however, dispense entirely with these "helps."

The game is not much played in Ireland, but we hear of it as practised in some form or other in most European countries, and in the United States, Canada, South Africa, Calcutta, Kurrachee, Japan, Australia and New Zealand (where there is a Bowling Association) it is rapidly advancing.

E. T. Ayers.

BOWLS, SCOTTISH—Bowl-playing is one of the oldest games now practised, and statistics could very easily be produced to prove that year by year it is still growing in popularity. In the fifteenth century it was unquestionably very popular, and in the next century an Act (33 Henry 8, c. 9) was passed, whereby it was declared to be an illegal pursuit, and it was further enacted that no person "by himself, factor, deputy, servant or other, shall for his or their gain, lucre, or living, keep, have, hold, occupy, exercise or maintain any common house, alley, or place of Bowling." It was alleged that it interfered with the practice of Archery, and it was only allowed to exist in the land as a luxury and for the rich. Thus, by the same Act of Parliament, artificers, servants, &c., might play at Christmas time, and a licence might be granted to those worth over one hundred pounds per annum to keep a bowling-green for private play only. Curiously enough, this Act remained unrepealed until 1845, when by 8 and 9 Vict. cap. 109, sec. 1, "any game of mere skill, such as Bowling . . ." was declared to be quite lawful.

Long before the embargo of Henry VIII.'s parliament was removed, the game was widely popular. In the north its progress was more extended and rapid than elsewhere, and in Lancashire, Yorkshire, and Scotland it speedily obtained a hold upon the affections of the people which it keeps to this day. According to Mitchell, the first bowling-green in Scotland of which we have any account is that of Glasgow. So popular has the game now become that some corporations, notably that of Edinburgh and Newcastle-on-Tyne, have provided public bowling-greens. On these greens it is usual to make a charge of one penny an hour, and it is only necessary to mention that during the summer of 1895, no less than 57,646 pennies were collected by the Edinburgh Corporation. Queen's Park, Glasgow, is the home of Bowling in the north, and is the chosen venue for the final stages of the annual champion-

ships in connection with the Scottish Bowling Association.

The game of Bowls varies in point of detail in different parts of the country, and even its title is not always the same. According to Mitchell and all the older authorities, the correct name of the game is *Bowl-playing*, although Mitchell uses the terms Bowl-playing, Bowling, and Bowls indifferently.

The game as played in Scotland differs widely from that played in Lancashire and Yorkshire. (Southern English Bowls has been explained in the foregoing article). The chief differences between the two games are these :—

In Scotland the greens are absolutely level, or as nearly level as skilled experts can make them ; spherical earthenware jacks are used to play to ; the play must be confined to the rink—that is, a space usually about seven yards wide, extending the full length of the green ; the players in single and double-handed matches invariably use four bowls ; and club matches are invariably played with four men a side, as in curling, each player using two bowls.

In Lancashire each green has a "crown" varying in rise and slope, so that it is almost impossible to find any two greens alike ; the jacks are of wood with bias, much the same as the bowls ; the first player can throw the jack to whatever part of the green he likes, the different lines of play thus frequently crossing each other ; players only use two bowls ; and matches are decided by a series of single-handed games, the rink form of contest being practically unknown.

The Scottish game is gradually extending its sphere beyond Scotland, and in London, Northumberland, Cumberland, Durham, Westmoreland, Ireland, Australia, and New Zealand, greens have been made and the game played as in Scotland.

Greens vary considerably in size, from thirty-five to fifty yards square being the usual extremes. Where grounds can be obtained at all, they should never be less than forty yards square, and five yards more each way is a very great advantage. That area permits of plenty of variety in the matter of length, and prevents the ends from becoming worn out, as they inevitably do when the green is so short that the mat has almost invariably to be on the same spot. In laying a green, particular care must be taken so as to ensure efficient drainage, and the turf used must be fine and wiry in substance, and such as to stand plenty of wear. Experience has taught that the turf found growing on the sand by the seashore is incomparably better than any other for a bowling-green, and so great is the demand for it, that a price quite equal to the value of the freehold of the land has to be paid before a sod can be turned. For many years the Ayrshire coast was the chief source of supply, but of late that has become exhausted, and nowadays we frequently hear of turf being brought from such distant isles as Colonsay and Islay. Of course all bowling-greens must be kept closely cut and rolled ; and to obtain the best results it is necessary to mow it a few times each season with a specially set scythe. An expert mower with a proper scythe will cut barrowfuls of grass after the closest-set machine can get no more ; and the advantage to be obtained, both in the way of keener play and a healthier green, can only be appreciated by those who know from experience.

The aim of every player is to get his bowls—"woods," they are sometimes called—nearer to the jack than his opponent, and immense variety is afforded by "drawing," "guarding" a shot or a road, "trailing" a jack to alter the position of an end, "striking" to remove an opponent or clear the way, and so on.

Up to a few years ago there was no recognised central authority on the Scotch game, but in 1891 one of the best bowlers in the north, Mr. James Brown, acting upon a suggestion dropped by the present writer, founded the Scottish Bowling Association. Already it has organised a couple of championships each season, one for single-handed play and the other for rinks, and the prizes offered are looked upon as the highest honours in the Bowling world. In Scotland all inter-association, inter-county, and inter-club matches are played in rinks, but at tournaments the play is almost invariably single-handed, although there are occasionally some for "pairs," and there is also the Association rink contest. Never a season passes but several tournaments take place, and at some of the larger meetings it is not uncommon to find more than five hundred entries, and the play extending over the best part of a month. It remains to add that the present practice of giving money-prizes is being opposed by an ever-increasing host of bowlers, who warmly approve of the strictly amateur position taken up by the Association.

J. B. LITTLE.

BOWLING—"Booling with bouls," as it is pronounced by Northumbrians, is played on a course whose length varies from 1,150 yards to one mile. The object is to cover the course in the fewest possible throws. For each throw a short run may be taken up to the "trig," which is a line fixed by the referees at right angles to the course, at the point where the ball last fell. The length of the trig is about two yards. The arm may be swung completely round before the bowl leaves the hand in the final lurch. The weight of the balls, which are mostly of stone, sometimes of concrete, varies from 3 oz. to 50 oz. Weights are, of course, specified before a match. Where the players are to be handicapped, the heavier balls are given to the better players.

In Newcastle the game is played largely by pitmen on the Town Moor, which consists of 927 acres of undulating grass land. Saturday afternoon is, naturally, a favourite time. Another Northumbrian course is at Newbiggin. The knots of pitmen who play it are extraordinarily keen and excited over it, and it is well not to balk them by ill-timed crossing of the course.

Glossary.

Alley—Properly a covered green, but sometimes used for any ground on which the game is played.

Auld-bowl—The bowl lying nearest the jack. Sometimes called Cast-bowl.

Baby—[*See* Jack.]

Back-hand or Cross-hand—The left-hand side of a right-hand player and *vice versa*. Used also in description of a throw when the hand is across the body at the moment of delivery and the bias on the right side of the bowl.

Bares—The old name for *Greens*.

Blocking—(Also **Guarding** and **Obstructing**.) Playing a bowl so that it shall come to rest between the next player and the jack, or any bowl at which he may wish to aim.

Burned—The jack, or bowl, is said to be "burned" when touched, accidentally or deliberately, by any player, or spectator after coming to rest. If by the former, the opposing side choose whether they will begin the "End" (*q.v.*) again or not, but if by the latter, it *must* be recommenced.

Cast—The unit of scoring; a ball lying within six feet of the jack and nearer to it than any opponent.

Charging—[*See* Firing.]

Cot—[*See* Jack.]

Cote—A sliding touch upon another bowl. [*See* Kiss.]

Cross-hand—[*See* Back-hand.]

Dead length—A bowl stopping exactly on a level with the jack.

Dead bowl—A bowl which is out of the game because:—

(1) It did not travel three yards from the "footer" (*q.v.*);
(2) It travelled off the ground, or
(3) It was moved by its owner or a partner.

Directors—The captains of sides; also called **Drivers** and **Skips**.

Ditchers—Bowls that at the first cast, or in the subsequent play, are driven off the green.

Drawing—Playing slowly up to an unobstructed jack, so as to rest close by it. In Scotland, placing a bowl a little beyond jack in the direction in which it is expected to be driven.

Drivers—The last players of a side, and usually the captains. [*See* Directors.]

Duggler—A bowl at rest touching the jack.

End—One delivery of all the bowls upon the two sides, after which the jack is again "set." Also called Head.

Firing—Sending the bowl with great force in order to carry away the jack or an opponent's bowl: or to disarrange the mass upon the chance of improvement. In Scotland it is known as **Riding**.

Footer—The square cloth or mat set by the place from which the jack was thrown. Each player must have one foot upon it at the moment of delivery. Also known as **Trig**. [*See* Hob.]

Fore-hand (also **Open-hand**)—The right-hand side of a right-hand player and *vice versa*. Used in description of a shot in such direction, with the bias on the left side of the bowl.

Green—The level grass surface upon which the game is played. It should be not less than forty yards square.

Guarding—[*See* Blocking.]

Head—[*See* End.]

Hob—The straight stick formerly used instead of the "footer" (*q.v.*). Each player must have one foot behind it when delivering the bowl.

Jack—The object at which all the bowls are aimed. It is usually turned from light-coloured wood, or from darker wood and painted white. Not infrequently, it is made of white earthenware; the diameter should be within the limits of $3\frac{1}{4}$ and $3\frac{3}{4}$ inches. Sometimes called **Cot** or **Baby**.

Kiss—[*See* Cote.]

Land—A local expression for the ground over which the ball is to travel (*e.g.* "Come this land.")

Lead—To throw the jack for a "mark" (*q.v.*).

Leaders—The first players upon a side.

Lurch Game—A game in which one side has scored five before the other has scored one.

Mark—A "mark" is *set*, *thrown*, or *led*, by the winners of an end after the score has been settled. It is obtained by throwing the jack, which should run not less than twenty and not more than forty yards from the footer.

Marred—If a bowl or jack in motion is impeded or has its course altered by any obstacle other than a bowl in play, it is said to be marred. If the jack be marred by a foreign article, or by a partner of the striker, the end is void, but if by an opponent, the striker may take his choice. If a running bowl be marred by the player or his partner, it is dead, and must be taken off the green; if by an opponent after passing the jack, the player may have his throw again, or may put the bowl where it would have gone; if by an opponent before passing the jack, he must have his throw again.

Narrow throw—A throw in which insufficient allowance has been made for bias.

Nutmegs—Very small bowls.

Obstructing—[*See* Blocking.]

Odd—Extra bowls played by a member of the side fewer in number to make the total throws equal.

Open-hand—[*See* Fore-hand.]

Over—A throw which goes past the jack.

Play-finger—To deliver the bowl with the little finger resting on its inner or smaller side.

Play-thumb—To deliver the bowl with the thumb resting on its inner or smaller side.

Points—The unit of scoring. [*See* Cast.] The number required for a game varies according to agreement. Generally the total is from seven to eleven, but in matches sometimes as high as twenty-one.

Raking—Scottish for "Stiff-drawing" (*q.v.*).

Riding—Scottish for "Firing" (*q.v.*).

Rink—(1) A narrow section of a bowling-green, some twenty feet in breadth taken by one party for their game. (2) All the players upon the two sides. (Both terms are more common in Scotland than England).

Rub—Any obstruction to the bowl's course from inequalities of the ground or natural obstacles; also used of a running bowl sidling from another.

Score—[*See* Points.]

Short bowl—One that does not reach the jack.

Side—Varies in number. In Scotland usually four, and in East Anglia three. In the north of England single matches are common. There are rarely more than four.

Skip—[*See* Directors.]

Skittling—"Firing" (*q.v.*) without judgment and without necessity.

Standard—The light reed or cane usually employed to measure the distance between rival bowls and the jack. It is only used up to one yard. The reed is shortened until it will no longer rest upon the first tested bowl and the jack. If it can then be made to rest upon the second and the jack, the latter wins the cast.

Stiff drawing—Playing with such strength as to move the jack a few yards onwards, or to push out another bowl. It shades into "Firing."

Still bowl—A bowl at rest.

Through the house—A delivery that goes through a mass of bowls without touching any.

Trig—[*See* FOOTER.]

Turning the jack—"Means a player doing any palpable act to indicate that he claims the game to be up as the bowls then lie, and his opponent allowing the claim. The only period at which this can be done is when the claimant or his partner has one bowl to deliver after all the bowls of the opposite side have been played."—ROYLE.

Void end—A round which does not count anything to either side owing to some accident, *e.g.* the jack knocked off the green, or interfered with by a spectator.

Welshman—A handicap match. Adopted from Cock-Fighting.

Wide throw—A delivery which allows too much for the bias.

Woods—Another term for the bowls. The jack is said to be "wooded" when surrounded by bowls.

RULES.

The Game of Bowls as played by the Norfolk and Suffolk Bowling Association.

1. No player shall change his bowls after commencing a game, unless with his opponents' consent. The circumference of a bowl not to exceed 16¼ inches.

2. On commencing a game, the footer must be placed by the leader before he throws the jack.

3. On changing ends, the leader, before he throws the jack, must place footer within one yard of the spot previously occupied by the jack, and from thence play must be resumed.

4. The footer must not be taken up until the last bowl has been played. If the footer has been taken up, and the last bowl by reason of a rub or set, has to be played again, it must be replaced as nearly as possible in its former position.

5. If the jack is struck off the green, the footer must be placed one yard from the edge opposite to where it had been struck; but if half the bowls have not been played, they must be returned, and play resumed from where the footer lay.

6. If the player who has to throw the jack fails in two trials to throw a mark, one of the opponents must then throw it. The defaulter (not the thrower) must play the first bowl. If the opponent at one trial fails to throw a mark, the defaulter again takes the lead.

7. If the jack in its course be impeded in any way, or stops on the land of any other players, it must be removed or thrown again.

8. If two jacks are thrown near the same place, the one that is last stationary must be pronounced not a mark, and must be removed or thrown again.

9. If a bowl be played before the jack is at rest, it must be taken off the green.

10. If a played bowl has reached its destination before the jack is pronounced not a mark, the end proceeds.

11. The jack must not be thrown so as to stop near the centre of the green and obstruct other players.

12. A jack, if delivered a yard from the boundary of the green, must not be played along the edge of the green, so as to rest at the same distance from the boundary. If the jack is at rest four yards from the edge, in a line with its course, it is a mark. A jack delivered four yards from the edge may rest at a distance of one yard.

13. The player on delivering a bowl must place his right or left toe on the footer, according as he plays with his right or left hand. Any bowl not so played may be stopped and played again. Any bowl not so played a second time, must be taken off the green.

14. A player after delivering a bowl must not follow it up in such a manner as to impede the sight of his opponent; if, after being cautioned, he persist in doing so, the opponents shall have the option of playing out the end, or declaring it void.

15. If a bowl be played out of turn, it may be stopped by an opponent; or, at his request, be played again in its proper turn; if, however, it has reached its destination, it must remain, and the opponent may play two bowls in succession if he has them.

16. If an opponent's bowl be played by mistake, it may be stopped; but if it has reached its destination, it must be replaced by the right bowl if requested.

17. If a bowl be played whilst the preceding one is in motion, it becomes a dead bowl.

18. A player may retain possession of the footer until his bowl has ceased running.

19. Players, when at the end where the jack lies, must not stand within the radius of the bowls as they are played, or directly behind the jack, so as to obstruct the sight of the other players.

20. When an end is finished, neither the jack nor a bowl that scores must be removed (unless with the consent of an opponent) until the casts are all counted and the players satisfied; otherwise the end may be declared void.

21. A person may be chosen to keep the score and declare it at each end; but if no scorer be chosen, the leader, before he throws the jack, must declare the state of the game by pronouncing his own score first, and loud enough to be heard by his opponents.

22. If a running bowl be impeded by an opponent, or any other cause, before it reaches the jack, it must be played again; but if impeded by the player or his partner, it must be taken off the green.

23. If a running bowl be impeded by the player or his partner, after passing the jack, it must be taken off the green; but if impeded by an opponent, or a bowl of the player's, it must remain where it stops.

24. If a still bowl be displaced by an opponent, or any other person, or by a bowl or a jack of any other players, it must be replaced as nearly as possible in its original position

25. If a player touch or displace a still bowl of his own or his partner, it must be taken off the green.

26. If a player take up or remove one of his own, his partner's or an opponent's bowl, to give himself or partner an advantage in play, he forfeits the game.

27. Before delivering a bowl, a player or his partner, on obtaining permission, may remove a bowl belonging to any other foreign set of players, if it obstructs his play, or they may take it up to prevent a running bowl of their own (but not an opponent) striking it.

28. If the jack is displaced by a bowl or the jack of any other players, or by any exterior cause, or taken up by one of the players whose bowl was nearest to it, before the last bowl is played, the end is void.

29. A player may block an opponent at hand whenever he thinks proper, but he must not play his bowl a less distance than four yards from the footer. The bowl must be played, for, if placed, it becomes a dead bowl.

30. If a player strike the jack with his bowl, and the jack rub or hit his partner, or any other person, or a bowl or the jack of any other players, the end is void; but if it rub or set on a bowl of the player's, it must remain where it stops, and the bowl nearest to it (when the end is finished) scores first cast.

31. Whenever the jack is struck off the green the end is void.

32. If a player touch the jack for the purpose of claiming the game, before the opponents have played their last bowl, or before he has a sufficient number of casts to win, the end is void.

33. The jack must not be turned, but may be touched gently with the finger.

34. If the last player and his partner have a sufficient number of casts laid to win the game, he may decline playing his bowl, or he may request his partner to touch the jack; and if, by then playing, he change the position of the jack or bowls, it does not alter the game.

35. If he play his bowl without the jack being touched, it must not be stopped or the jack touched; and if the position of the jack or bowls is changed, and the casts reduced to less than will make the game, or if he set an opponent's bowl first, it scores, and the game proceeds.

36. If a bowl so played be stopped, or the jack touched by the player or the partner, the end is void.

37. When it is doubtful which bowl is nearest the jack, it must be decided by a standard, if the distance is less than a yard. After the standard is taken by the leader or his partner, the bowl must be removed; then, if the opponents can make it rest on their bowl and the jack, they win the cast.

38. Whenever a bowl rests against another, and the bowl rested against has to be removed to allow the other to be measured from the point nearest the jack, it must be removed by an opponent or a disinterested person, and measured as it settles after such removal.

39. No measuring is to be permitted until the end is finished.

40. A player may instruct his partner, but he must not stand or place any object between him and the jack for the purpose of indicating the land to be taken when he is in the act of playing.

41. Bowls played or struck off the green, or prevented going off by resting against anything at the edge or in the channel, must not be scored.

42. If, during the course of the game, it becomes so dark that the jack cannot be distinctly seen from the footer, any player may have a light exhibited at the jack if he so request.

43. Spectators are not permitted to instruct, or give any intimation whatever to players, and are amenable equally with the players to the rules of the green and the game.

44. No persons, other than players, are allowed on the green, except measurers, at such times as their services are required, and dogs are not to be brought on the green by any person.

45. No bowl to count that is more than six feet from jack.

46. If a bowl be carried by the player four yards from the footer, the bowl to be forfeited.

NOTE.—The rules of the game vary considerably in different parts, but the foregoing may be accepted as typical.

BOXING—This art, of great antiquity and undoubted usefulness, whether looked upon as a most interesting and perfect branch of gymnastics or as a means of defence which supersedes the use of artificial weapons, has always been held in high regard in England; and, notwithstanding the decay of the prize-ring as an institution, probably at no period in the history of the country was the "noble art of self-defence" in greater vogue than it is at the present time.

Boxing, in this country at all events (for in what is called "la boxe française" the use of the foot as a weapon is admitted and encouraged), consists essentially in striking with the closed hand or fist, covered for purposes of practice with the boxing glove of soft leather, stuffed with horse-hair, to act as a necessary buffer between the face and the attacking knuckles.

There has grown up, round what would appear to the uninstructed mind a simple matter, a very complicated and artistic system of attack and defence, subject to such rigid prescriptions, as shall insure immunity from brutality and unfairness.

An extraordinary development of glove-fighting has been seen of late years, and, instead of the old battles with bare knuckles which were so frequent in the early Victorian age, we have seen that a great deal of encouragement, pecuniary and social, has been bestowed upon glove-contests between professional exponents of the art.

Whether this has resulted, as might at first sight have been expected, in an increase of scientific development as distinguished from mere endurance and power of giving as well as receiving punishment, or whether something has not been sacrificed in the way of general efficiency to the desire to terminate a contest abruptly by a "knock out," is a question which requires some consideration.

It is certain that the majority of boxing matches in the present day are so terminated, whereas in the old days of knuckle-fighting, the days of the Fives-court, Nat Langham's, Jem Shaw's, Bill Richardson's, and other well-known resorts of the old fashioned fighting-man and his patrons, this seldom occurred; and the fact may be attributed, we cannot but think, to their "shaping" in the manner we shall endeavour to describe when treating of position, and to the jealous care with which a straight use of the left-hand was taught and practised.

The object now seems to be in too many instances to endeavour by hook hits and round half-arm hitting to "send to sleep" an antagonist as soon as possible, risking in the process the reception of hits which, if made with the bare knuckles, could not but stop the most thorough "glutton" for punishment.

An example of the brilliant and successful use of the straight left against these attempts is to be found in the case of an accomplished coloured boxer, Peter Jackson, whose style shows more of the old form than that of most of his colleagues.

It is a notable fact, upon which we may perhaps be allowed to congratulate ourselves without being charged with too much chauvinism, that England and her colonies, notably Australia, have produced so many able exponents of the art of boxing and that the majority are of Anglo-Saxon or Hibernian blood, whether hailing from this country or the United States; and that several boxers of eminence from the last-named country have to acknowledge the United Kingdom as their native home.

The general enthusiasm for the art of self-defence has spread from the civil population to the military forces, and there is something very remarkable in the rapid strides that have been made of late years in this direction in the army, the navy also, as might be expected when anything combative is toward, being well in evidence.

The Brigade of Guards some four years ago showed the way by engaging efficient instructors, and now, thanks partly to this good example, at such great military centres as Woolwich, Chatham, Aldershot, Portsmouth and the London barracks, regimental and garrison competitions are held each winter, and an annual championship meet-

ing takes place at Aldershot. That this manly and healthy sport possesses the sanction and good-will of the higher authorities is shown by the fact that the present commander-in-chief, Lord Wolseley, stated when presenting the prizes at Chelsea Barracks, that he hoped that boxing would very soon form part of every soldier's education.

We can only wonder that the authorities at Scotland Yard and the chiefs of police throughout the country have not insisted upon instruction in boxing forming a part of every policeman's education. The time is probably not far distant when this will be the case, no doubt to the great advantage of a fine set of men who have very arduous and dangerous duties to perform with an equipment of arms much inferior to that used by any other police force in the world. Even if they use the comparatively inefficient weapon which they carry, the truncheon, except in circumstances of the greatest pressure, they have to run the risk of severe censure.

We have said that the English race, using the term in its widest sense, appears undoubtedly to possess a marked pre-eminence in the theory and practice of the "noble art of self-defence;" but let us caution the aspirant, proud in the confidence of youth and strength and flushed with a sense of racial predisposition, that skill in boxing does not come by the light of nature; and that, if he desire to use his "natural weapons" to the best advantage, he will be well advised in seeking the tuition of some accredited master. It is only by assiduous practice and imitation of well chosen examples that proficiency is to be attained in what is a highly complicated and scientific sport.

None of the arts of defence can be learned from books, though books may be useful as adjuncts to practical demonstration, in fixing principles, maintaining what is of value in tradition, and furnishing useful hints and necessary cautions.

This being premised, we will endeavour to explain as succinctly as possible those different positions, leads-off, counters, guards, stops, and means of avoiding hits by ducking, slipping, and getting away which experience has taught to be most useful.

We shall adopt the following classification:—

Position — Getting About and Breaking Ground—Lead-off at Head with Left Hand—Guard for Lead-off at Head with Left Hand—Guard with Right-hand and Counter with Left-hand—Lead-off and Guard Left-hand Counter—Counter at Body with Left Hand—Counter at Body with Right Hand—Lead-off with Left Hand and Duck—Left-hand Lead at the Body—Guard for Left-hand Lead at the Body—Stop for Left-hand Lead at the Body—The Upper Cut—Double Hit at Body and Head with Left Hand—Guard for above—Right-hand Cross-Counter—Stop for Right-hand Cross-Counter—Feints—Draws—Ducking—Slipping—In-Fighting.

Position—Place the left foot in front, pointing straight towards your opponent, the left

Fig. 1.—Position.

knee slightly bent and foot flat on the ground, the right foot about once its own length in rear of the left with the toes slightly turned to the right, but not nearly so much as to form a right angle with the left foot, the ball of the right foot on a line with the heel of the left, the right heel slightly off the ground, the weight being chiefly on the ball of the right foot.

The body is turned three-quarters towards your opponent, the head being slightly inclined to the right and not presented full-face, but in such a manner that you maintain your view of your opponent chiefly with the left eye. This position diminishes greatly the chance of the point of the jaw, the mark for the right hand cross-counter, being reached.

The right hand and fore-arm are to be placed across the lower part of the chest, nearly horizontally, so as to cover that part of the pit of the chest which is known as "the mark." This is a point of major importance, as a severe punch in this part is both painful and disabling, and if unchecked might bring a friendly sparring match to an abrupt end.

The left hand and fore arm are to be held horizontally on a level with the elbow, so that arm and forearm form a right angle, the hand pointed towards the opponent, the elbow kept close to the side.

Let the shoulders be well kept down, the right slightly lower than the left. Stand easily and avoid any fixing or tightening of the muscles; let your whole attitude be free and unconstrained; a great deal depends upon the suddenness of the attack and, if the muscles are rigidly strained, quickness and ease are rendered impossible. This, however, will be better seen when we come to consider the next point.

Getting About and Breaking Ground—The beginner, being placed in proper preliminary position, or "on guard," must now be taught to shift his ground in accordance with the varying needs of the situation. Let it be impressed upon him that the relative position of the feet is to be rigorously maintained, except in the case of some attacks and counters, to be described in due course, after the delivery of which he immediately returns to the original position. This position, which undergoes some slight alteration in accordance with the idiosyncrasies of various teachers, is, in the main, the best as a point of departure for attack or defence, the left hand being ready for immediate use in leading-off or countering, the right hand guaranteeing the most vulnerable portions of the body, ready to guard the head and mark, and held as a crushing reserve to be used when opportunity presents itself.

To Advance, the pupil is taught to step forward about the length of his own foot with the left foot, the distance traversed being naturally regulated by his length of limb, the left heel being distinctly the first portion of the foot to touch the ground, and to follow it up smartly with the right foot.

In Getting Back, the right foot is moved to the rear, about the above named distance, followed by the left foot. In this and the preceding case the distance between the feet and their relative positions are to be carefully maintained.

Boxers are in the habit of circling round each other, or in other words "breaking ground" either to right or left, but the beginner is to be taught that breaking ground to the *right* is safer as by that means he keeps out of danger of his adversary's right hand, and his feet are less likely to be crossed, a thing which might be disastrous to the combatant if attacked when in that position.

To Break Ground to the Right, the boxer steps about twelve inches to the right with the right foot and immediately places the left foot in position in front of it.

To Break Ground to the Left he steps to the left with the left foot, and without loss of time, places his right in position in rear of it, but this mode of procedure, as stated above, is considered fraught with danger and must be used with caution.

Sometimes the boxer may jump back with both feet off the ground at once, taking care to maintain the proper position. This jump may be repeated when hard pressed and when there is sufficient floor room. When out of distance, the left hand may be dropped to ease it, but when within distance it must immediately be brought up to the proper position.

The beginner must be taught to get about easily and lightly, moving his feet smartly and retaining his balance and the proper distance and relative position of the feet. The hands are not to be kept immovably in the attitude described but to move easily backwards and forwards in unison with the movements of the feet.

Lead-off at the Head with the Left Hand—This is the most frequent and the most useful and safe of all attacks, and upon its proper execution, smart and quick, with the weight of the body assisting the force of the

FIG. 2.—LEAD-OFF AT HEAD WITH THE LEFT AND GUARD.

blow, must the whole system of sparring be founded. It must be made with quickness and determination, otherwise the task of your adversary in countering is rendered dangerously easy.

Step in, in the manner described for the

advance, striking with the left hand at your adversary's head, letting hand, body, and foot work simultaneously with as much rapidity as you can possibly command. Take care that the left hand and elbow are in proper position —at the beginning of the attack, the left elbow is to be close to the side and the hand is to be shot out smartly with the palm slightly upward, so that the knuckles will be the part to come into contact with the face.

Your left foot should touch the ground at the same time as your hand reaches your opponent's face, and should bear most of the weight, the right foot resting lightly on the ground. Take care that, in stepping in with the left foot, the heel is distinctly the first portion of the foot to touch the ground and that the foot points straight towards your antagonist, as the hand will instinctively follow the direction of the foot. Immediately after the delivery of your attack step smartly back, your left hand in position to meet any emergency. If hard pressed you may spring back, both feet off the ground at once.

It may here be pointed out that the boxer must in all cases hit with that part of the glove which covers the knuckles and not with the point or the inside of the glove; striking with the inside, or "heel of the glove" as it is sometimes called, would entail disqualification in competitions, and hitting or flicking with the point of the glove is an attempt to gain reach at the expense of all efficiency.

Hits are to be directed at the head and face and any part of the body above the belt.

Guard for Left Hand Lead-off at the Head—Raise the right hand in front of the left side of the forehead, half extend the arm, and maintain your view of your opponent over your right fore-arm, keeping the elbow down and the palm of the hand outwards. You will find that in this position you get a pad of muscle before the bones of the fore-arm which will break the force of the blow considerably. Whilst this attack and guard are being practised, as they should be, assiduously, so as to make them a good basis of departure for the other movements, care should be taken that the eyes are kept open (a matter not always so easy as it would seem) and fixed upon the adversary, so that no movement of his may be lost, and that the mouth is kept shut. A blow upon the partially unclosed jaw shakes it terribly and might even dislocate it. The hands must not be kept constantly clenched, which would only fatigue the muscles and cause slowness and stiffness. In getting about or sparring round, in what is known as "out-fighting," the hands are to be kept partly open and are to be firmly closed on the delivery of a blow and, in some instances, on the formation of a guard. The left hand lead-off at the head may be met in other ways to be described in due course—as by the left hand counter at the head, or left hand counter at the body with a duck to the right, or by the right hand counter at the body with a duck to the left, or by that most effective of manœuvres, though difficult of execution, the right hand cross-counter.

Guard and Counter with Left Hand on the Lead-off at the Head with the Left—Form your head-guard as before described with the right hand, and strike out at your adversary's face with your left at the same moment of time. The position of the left hand and arm is precisely the same as in the lead-off but the movement of the feet is different: you will keep the right foot firmly fixed on the ground and step forward with the left about once its own length. You here combine the two movements of guard and return, and must be careful to time them accurately and start at the same time as your opponent.

Lead-off and Guard the Counter—Should you anticipate that your opponent will counter at your head with his left on your lead-off, you will, as you lead off, guard with your right hand.

Counter at Body with Left Hand—Step in with the left foot inside your opponent's,

Fig. 3.—Counter at Body with Left Hand.

the ball of your foot coming on a line with that of his, keeping your right foot in place, firmly fixed on the ground, and helping the forward

impetus of the body as in a fencing lunge. Incline body and head well to the right so that his hand in the lead-off may pass harmlessly

Fig. 4.—Counter at Body with Right Hand.

over your left shoulder and hit with the left hand at the mark, hand and foot working together. The palm of the hand is to be turned downwards. Here we have an example of that other position of the feet to which we have referred at the beginning of the article, and great care should be taken that the movement is correctly executed, and that the body is brought forward and downward as well as to one side sufficiently to bring the head out of danger without risking the loss of balance.

This movement has a certain kinship with a lunge in fencing but will be seen to differ in material particulars. It constitutes what is termed a "Duck," and we shall have frequent need to refer to it.

Counter at Body with Right Hand—To counter with the right hand at the body, bend the body and incline it and the head to the left, step forward in the same way as before with your left foot, the heel of the right off the ground, bring forward your right shoulder and hit with the right hand slightly below the heart, the palm of the hand turned down, keeping the left hand in position.

There is no possibility of stopping the right hand counter at the body when leading off with the left hand at the head, if the counter is aimed at the spot directed (just below the heart), your right arm, which protects the mark, not reaching sufficiently far to stop this blow, and your left arm being placed by its movement of attack in an impossible position for guarding.

Lead-off at Head with Left Hand and Duck—Lead-off at the head with the left hand, retaining your hold of the ground with your right foot as in the case last described, incline body and head to the right (duck) so as to allow your opponent's fist, should he counter, to pass over your left shoulder. The palm of the hand is to be slightly downward at the time of delivery. The right hand is to be kept in position over the mark.

Lead-off at Body with the Left Hand—This is made in the same manner as the preceding attack, with the right foot fixed. The duck is to the right in this instance. The blow is delivered at the mark. The knuckles are turned up (palm downwards), the elbow slightly inclined outward. After the blow is delivered you are to spring back well out of distance. It will be observed that all these attacks with ducks bring you much nearer to your opponent than the left-hand lead-off at

Fig. 5.—Lead-off at Head with Left Hand and Duck.

the head, and there is increased necessity for smartness in getting away to avoid what is known as an upper cut, to be described presently.

Guard for the Above—This is guarded by the right arm, simply kept in its original position across the body, carefully and efficiently covering the mark.

Stop for Lead-off at Body with the Left—Immediately your opponent commences to move, if you are able to judge his intentions correctly, which practice will enable you to do, counter straight at his head with your left hand. This will effectually check the completion of his attack and form what is very aptly termed a "stop." It is in fact a time hit and if delivered with judgment is an exceedingly effectual and pretty manœuvre.

Should you not have attempted to stop him upon this attack, you can guard it in the ordinary way with your right hand, and before he has time to spring back out of reach, upper cut him with the left hand.

The Upper Cut, as its name implies, is a hit delivered in an upward direction with either hand; with the arm bent and the elbow kept down. As your adversary is brought close to you by his movement of attack, there is neither need nor opportunity for you to advance on

FIG. 6.—DOUBLE HIT AT BODY AND HEAD WITH THE LEFT HAND.

him, but the blow can be swung upward with great force, every muscle in the body seeming to aid its impetus, and if the right time is seized, the position of your opponent's head and body will insure his getting its full force.

This very useful hit may be used as a counter under several circumstances, especially upon your adversary's leading off with the right hand at the body (a practice not to be recommended), or, upon his leading off at the head with either hand, holding his own head down. Form a body guard with the left arm or a head guard with the same, according to the circumstances of the attack, and cut upwards at your opponent's face with the right hand, the arm bent and elbow down. In case of a wild and ill-judged rush on your opponent's part, with head down and arms flapping wildly like the sails of a windmill, the upper cut may advantageously be administered with either hand according to the position of his head, and will probably have a markedly deterring effect.

It may be well here to notice that methods are taught by skilful professors for "drawing" these upper cuts, and for dealing with them when so drawn by various movements of great practical interest.

These would come under the designation of "Feints," of which we shall endeavour to give a summary description in due course, but they are only to be learnt by careful practice in sparring with an able instructor.

Double Hit at Body and Head with the Left Hand—Lead off at the body in the manner just mentioned above and, instead of making the rapid retreat there described, bring forward your right foot to its ordinary distance from the left in the guard position and step in again with the left, striking at the face as in leading off with the left, except that here in both instances the palm of the hand should be turned down. In this case, the assault at the body is what is called a "draw," and acts as a feint by drawing off your opponent's attention from his head, which is your real objective.

Guard for Double Lead-off—Form a body guard with the left arm by placing the forearm across the body in such a manner as to cover the mark, elbow close to the side, and form your head guard with the right hand in the usual manner.

This double guard is exceedingly useful, and one may often use it when hard pressed or puzzled by a sudden and unexpected rush of an antagonist. It is well in this case to combine it with a movement of retreat.

Right Hand Cross-Counter—We have now to deal with a movement which, while it forms a most tremendous weapon in the hand of the boxer who knows how to time and execute it with perfect precision and absolute appropriateness in point of time, will land him in great difficulties if attempted at the wrong moment and without sufficient powers of execution. For this reason it is not to be attempted by the tiro until he has achieved a proper degree of proficiency in the various other attacks, stops and counters. It may be thus

described:—Upon your opponent s moving to lead off with his left hand at your head, step in with your left foot inside his, so that the ball of your foot comes into line with that of his, and at the same time duck to your left, so that his hand may pass over your right shoulder, and strike with your right hand, knuckles turned up, at the point of his jaw, bringing your right shoulder well forward, by that means and the forward movement of your body in the duck, throwing the whole of your weight into the blow. The right foot is naturally drawn forward towards the left as this blow is delivered.

The position at the finish, if the movement has been well timed, is that your opponent's blow has passed harmlessly over your right shoulder, whilst your right hand has crossed over his left arm to land upon the point of the jaw. This blow, the force of which is increased by the momentum of the forward movement of both men, very often puts a final stop to an assault by "knocking out" its recipient. Even with muffled hands it comes with tremendous force and should be rather indicated than actually driven home in friendly sparring.

When the learner has sufficiently educated hand, eye, foot and, last but not least, judgment, to be able to bring this counter-hit to a satisfactory conclusion he may flatter himself that he has nearly passed out of his novitiate.

Stop for Right Hand Cross-Counter—If you can catch your adversary on the beginning of his movement, before he has had time to duck, hit straight at his head with your left hand and his movement will be effectually stopped. It is upon slow and tame attempts at leading off that the counters can be safely used and a determined and straight delivery renders them too difficult and dangerous to be properly executed.

Feints—The feint is, as its name implies, a feigned attack or simulacrum of attack made to enable you to judge of the plan of defence likely to be adopted by your adversary. It is also made at a certain point preliminary to the real attack, with a view to induce him to cover that point, and in so doing necessarily to uncover some other part at which the real attack will be delivered.

For instance, you may feint a left hand lead-off at the head by making a quick partial extension of the arm at the same time that you make a short step forward with the left foot. Should your opponent move to a head guard, you can then deliver a left hand body-blow.

Should he cover the head for a moment and immediately return to his ordinary guard you can follow up your feint at the head by a real attack made at the same spot.

Should he show a tendency to counter at the body or cross-counter at the head, you may find an opening for an upper-cut.

If your opponent, priding himself upon the possession of a good right hand, makes repeated attempts to cross-counter, you can make a feint at the head with the left hand to draw his counter, and follow it up with a determined

Fig. 7.—Right Hand Cross-Counter.

lead-off at the head with a duck to the right, which will entirely spoil his game.

Feints are also made with the right hand, but the beginner is warned to be sparing of either feints or lead-offs with this hand. Should it be desired to employ them, feints with the right are made by suddenly drawing back the arm as though preparing to hit, the hand not being "placed" for attack like the left (and this alone would serve to show the danger of leads with this hand). At the same time that you draw the arm back, the left foot is to make a short advance.

Draws—A draw is but a kind of feint, having for its object to draw your adversary's attack with the intention of countering upon his movement. It is not unlike what is sometimes termed a "combined attack" in fencing.

Ducking This has already been described in various appropriate positions; its essence is to avoid a blow by moving the head to one or other side at the same time that it is carried upon a lower plane than that of the general guard. Examples of it have been given in the description of the right hand cross-counter, the left-hand counter at the head, that at the

body, &c. It is an exceedingly useful manœuvre, but it must be used with caution, as if a man can be induced to duck upon a feigned attack, he is very likely to become the recipient of some unwelcome attention in the way of an uppercut.

Slipping—This affords a way of getting out of an awkward position, such as, for instance, occurs when you have been forced into the corner of a ring, or may be useful in the case of your being subjected to the rush of a man carrying heavier metal than yourself. Upon your opponent's advance, feint a lead-off with your left, duck to the right, and, instead of recovering backwards in the ordinary way, bring up your right foot and make another step forward with the left foot, passing under his left arm. This will bring you on the left side of your opponent instead of his front, and to face him again you must, of course, turn smartly to your left once more.

In-Fighting—We have so far dealt with what is termed 'out-fighting,' and have now to describe what happens when two men come to really close quarters: here we have done with all finessing and manœuvring, and the only thing possible is to try to hit quicker and harder than your opponent and to endeavour to get your hands inside his, as by that means you gain a considerable advantage.

In-fighting is brought about generally by one of the men getting cornered and setting to work to fight his way out like one "rightly struggling to be free," or simply obeying the natural law which dictates combat to every hunted animal whose retreat is cut off, and is often forced by a boxer who finds himself over-matched at out-fighting by an adversary gifted with a better left hand than his own.

When this happens, you will bring your right foot nearly in line (front line) with your left, the ball of the right foot on a level with the heel of the left and with an interval of about 12 inches separating the two; you will keep your head down by well sinking the chin, while you keep your eyes fixed on your opponent's and strike with right and left hands as quickly as may be at the head, not drawing back the arms too far, and throwing the weight of the body into each hit by bringing the shoulder forward as you strike. Both knees are slightly bent. In beginning in-fighting, the left hand should be aimed at the face, the right hand at the point of the jaw. This gives the desired position inside your opponent's arm. Holding your adversary is not allowed in competitions, and it is better, irrespective of this, to have both hands free and busy in hitting. Blows should mostly be aimed at the head, the mark being visited when occasion offers; they are delivered with a bent arm, and constitute what is termed "half-arm-hitting."

After the delivery of four or five effective blows you must get away smartly. Nothing is more distressing to the onlooker than to see two men, exhausted and out of breath, tumbling up against each other and feebly pushing their gloves each into the other's face.

The above description, although it makes no claim to be exhaustive, will give, we hope, to the inquirer a sufficient idea of the various modes of attack and defence which are most sanctioned by experience.

Other methods of attack there are, no doubt, and some of them, such as the lead-off at head or body with the right hand, have been deliberately omitted, as we consider that they lay the boxer dangerously open when opposed to a man with a good left hand; and it is well, in accordance with the ancient precept "never despise your antagonist," always to behave as if you had a good man in front of you.

It used to be the custom in works on boxing to describe various wrestling movements such as the "cross-buttock," "back-heeling," &c., &c., and also what is named, by a kind of inuendo against the legal system of this country, "getting into chancery," from which it was as difficult to extricate a pugilist as a litigant; but since the well-nigh complete extinction of the old system of prize-fighting, these, with all sorts of holding and gripping, have been excluded from the field of legitimate boxing and particularly tabooed by the Amateur Boxing Association.

Training—It may be expected that we should say a few words as to the mode of preparation for boxing, although we cannot lay down a complete system of training for boxing competitions.

The boxer who wishes to maintain himself in good and tolerably hard condition and to develop quickness and activity, is, in the first place, recommended to avoid such exercises as tend to produce a huge and unwieldy development of muscle, which, however imposing in appearance, would only make him ponderous and slow in his movements. The rapid motions of the torpedo-boat are rather to be imitated than the slow, if majestic, progress of a first-class ironclad, and while the weight of the body should be employed in driving home the force of a hit, inert weight is of but little use. Weight-lifting, practice with heavy dumb- or bar-bells, Indian clubs, and slow gymnastic exercises, are therefore to be carefully avoided.

Quick movements with dumb-bells weighing from two to three pounds each, stepping in and striking at a suspended football and getting away smartly from its recoil, or, following the example of many distinguished boxers, skipping with a skipping rope, with plenty of walking exercise and occasional sprinting or running a distance of about sixty yards at top speed, are exercises admirably adapted to develop the breathing power and to induce quickness and alertness on the feet. Fencing and sabre or stick-play might

be looked upon as excellent practice for sparring, were it not that they themselves demand so large a share of the attention of their devotees. Lawn-tennis, no doubt, requiring as it does, quick movements and a watchful and attentive eye, is an admirable preparation for boxing. In fact any exercise which tends to increase the respiratory powers and to develop the muscular system by a series of active movements not entailing too great an expenditure of force at a given moment may safely be recommended. [*See* TRAINING.]

Above all, let the learner never throw away any chance that may present itself of engaging in friendly sparring with the best men he can induce to put on the gloves with him; and let him rest assured that he will always find the best performers the best tempered and the most opposed to slogging and roughing.

Let it not be forgotten that it has been claimed for the exercise which we have endeavoured to describe, and, no doubt, rightly claimed, that its influence upon the physique and general health of the body is not more potent than its disciplinary effect upon the "morale" of its exponents; and that it has been supposed to teach endurance, fortitude, courage without swagger, and generous forbearance.

Should it continue to do this in the future as it has in the past, it cannot but be considered a powerful agent in the formation of what is best in the national character.

B. JNO. ANGLE.
G. W. BARROLL.

GLOSSARY.

Break away—To get away from an opponent.

Break ground—To take up a fresh position to the right or left.

Bye—In a competition where the number is uneven, the odd man is said to draw a "bye," and has to box the usual number of rounds with a non-competitor.

Corner—The opposite angles of the ring in which contestants sit during the intervals between the rounds.

Catchweight (To box at)—Boxing without restrictions as to weight.

Counter—A blow given in response to an opponent's lead-off, as nearly as possible simultaneously.

Cross Counter (Right Hand)—A blow at the head delivered with the right hand, across an opponent's left lead at the head.

Draw—A feigned attack, to cause an adversary to expose his tactics.

Duck—Inclining the head to left or right to avoid a blow.

Feint—A show of attack made at one spot, in order to make an adversary guard that, and in the act uncover some other point.

Foul—An act committed contrary to the rules of boxing.

Gloves—Leather gloves padded with horsehair used in boxing.

Guard—Defence with either arm to protect the head or body.

In-Fighting—Fighting at close quarters.

Judges—Two officials placed at opposite sides of the ring. If their opinions agree the winner is declared, but should they disagree, the judgment of the Referee is demanded.

Knock-out—A blow which, in the opinion of the Referee, decides a bout by the temporary disablement of a contestant.

Lead-off (Left hand)—A hit with the left hand (not a counter) at the head or body.

Mark—The pit of the stomach.

Out-Fighting—Leading off from a distance and preventing your adversary from getting to close quarters.

Point—Either side of the chin.

Position—The attitude taken by a boxer when facing his opponent.

Referee—The official whose judgment is appealed to in the event of the judges disagreeing. He is invested with supreme power, and his decision is without appeal. He can disqualify a competitor in the event of a foul, or stop a contest when he decides that sufficient punishment has been administered.

Ring—A roped enclosure, of not less than fourteen feet square in open competitions.

Round—A period of time, usually of three minutes' duration, during which the boxers are continuously engaged. In competitions governed by the rules of the Amateur Boxing Association, three rounds are contested, two of three minutes and one of four, with an interval of one minute between each round.

Seconds—Men, generally professional boxers, appointed to attend on the contestants in the intervals between the rounds. During the progress of the rounds they must be outside the ring.

Side Step—Consists in drawing the left foot slightly behind the right foot, and springing sharply off the ball of the left foot towards the right front.

Slipping—On the adversary leading off, a long step forward, combined with a duck, is taken with the left foot, thereby avoiding the line of attack.

Stop—Frustrating the adversary's intention by a more rapid attack.

Time—The call to commence or conclude boxing.

Timekeeper—The holder of the watch, who times the duration of the rounds and of the intervals between the rounds.

Timing—A blow delivered simultaneously to the opponent's attack.

Upper Cut—This blow is in reality a counter, delivered upwards with either hand, when an opponent leads off or rushes in with his head down.

Weights—Boxers are divided by the Amateur Boxing Association into five classes, according to their weights, as follows:—

Bantam Weight,	not exceeding	8 stone 4 lbs.	
Feather	,,	,,	9 ,,
Light	,,	,,	10 ,,
Middle	,,	,,	11 ,, 4 lbs.
Heavy	,,	... ...	any weight.

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BREAM (*Abramis brama*). [*See* ANGLING (COARSE FISH).]

Length of head 5 to 6, of caudal fin 4½ to 4⅔, height of body 3 to 3⅔ in the total length. *Eyes*—diameter 4½ to 5½ in the length of the head, 1½ diameters from the end of the snout, and 2 diameters apart. Body oval, elevated and strongly compressed. Head small, snout short and obtuse, mouth protractile and small, upper jaw slightly the longer and reaching posteriorly to below the anterior nostril, lips

moderately developed. *Teeth*—pharyngeal; 5/5 compressed and notched at their extremity. *Fins*—the dorsal commences slightly behind the base of the ventral, and about midway between the front edge of the eye and the base of the caudal fin, and just below the end of the highest point of the dorsal profile, while its last ray is on a line with the first of the anal; it is highest anteriorly. Pectoral inserted low down, and as long as the head excluding the snout, it reaches to above the commencement of the ventral, and the latter to the origin of the anal. The anal fin is falciform, and highest anteriorly. Caudal deeply forked. *Scales*—of medium size, higher than wide, $6\frac{1}{2}$ or $7\frac{1}{2}$ between the lateral line and base of ventral fin. On the edge of the abdomen between the ventral and anal fins, the scales do not pass across, forming a sharp keeled edge. *Lateral-line*—curves downwards, passing along the lower third of the body to the base of the caudal fin. *Colours*—back of a dull olive or sea-green, lighter on the sides and beneath, the abdomen being silvery tinged with pink. In old fish the body becomes more of a yellowish colour. Fins brownish, the pectoral rays being often tinged with scarlet, which colour may be seen in the first few rays of all the other fins. Day, *Fishes of Great Britain and Ireland*, vol. ii. p. 193.

BREAM-FLAT OR WHITE BREAM (*Abramis blicca*). [*See* ANGLING (COARSE FISH).]

Length of head $5\frac{1}{2}$ to $5\frac{3}{4}$, of caudal fin 5, height of body $3\frac{1}{4}$ to $3\frac{1}{2}$ in the total length. *Eyes*—diameter $3\frac{1}{4}$ to $4\frac{1}{4}$ in the length of the head, $1\frac{1}{2}$ diameters from the end of the snout, and $2\frac{1}{2}$ diameters apart. Body oblong, elevated and compressed; dorsal profile in an almost regular curve to the commencement of the dorsal fin, from whence to the caudal it is somewhat concave; head rather small; snout short and obtuse; upper jaw slightly the longer, extending backwards almost to beneath the front edge of the orbit; mouth protractile, lips rather thick. *Teeth*—pharyngeal in two rows, 5–4, 2–3/3–2, 4–5. *Fins*—dorsal commences behind the insertion of the ventral and about midway between the front edge of the eye and the base of the caudal fin, and just beyond the termination of the highest point of the dorsal profile, while it extends usually to above the third or fourth anal ray, but occasionally not quite so far. Pectoral inserted low down, and as long as the head from behind the nostrils; it reaches to above the commencement of the ventral, which latter does not extend to so far as the anal. Anal falciform, highest anteriorly. Caudal forked. *Scales*—of medium size, higher than wide, five to six rows between the lateral-line and the base of the ventral fin. On the abdominal edge, between the ventral and anal fins, the scales do not pass across, forming a keel. *Lateral-line*—passes downwards and is continued to the base of the caudal fin. *Colours*—silvery, darkest along the back, sides tinged with rose-red, fins of a bluish colour, the dorsal, anal and caudal, with dark outer margins, the pectorals and ventrals tinged with red. Day, *Fishes of Great Britain and Ireland*, vol. ii. p. 197.

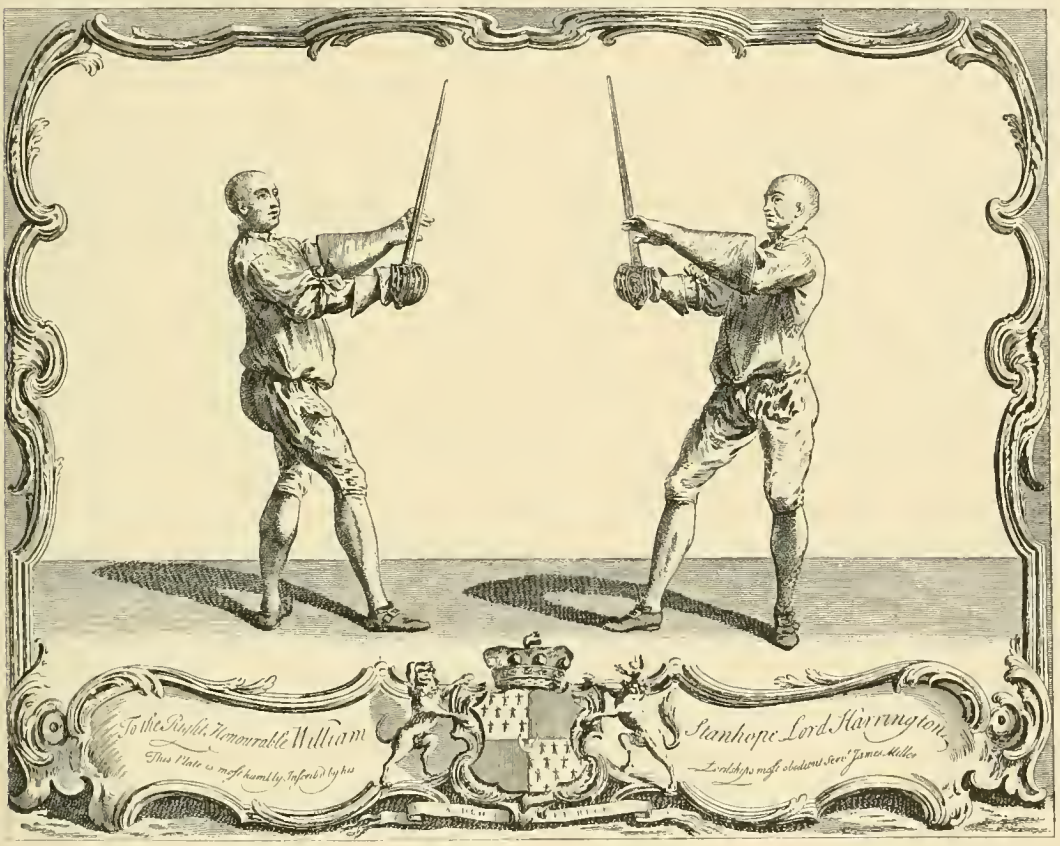
BREAM, SEA (*Pagellus centrodontus*). [*See* SEA FISHING.]

Length of head $3\frac{3}{4}$ to 4, of caudal fin 5 to $5\frac{1}{2}$, height of body $3\frac{1}{4}$ to $3\frac{1}{2}$ in the total length. *Eyes*—$3\frac{1}{3}$ to $3\frac{1}{2}$ diameters in the length of the head, 1 diameter from the end of the snout, and also apart. Interorbital space flattened. Preorbital wider anteriorly than it is posteriorly, its greatest depth being scarcely equal to half its length; it is unnotched over the posterior end of the maxilla. Opercle about twice as high as wide. Jaws of equal length in front; the maxilla reaches to beneath the front edge or even anterior third of the eye. Posterior nostril the largest and obliquely oval. *Teeth*—three or four irregularly placed rows of rounded teeth of different sizes laterally and posteriorly in either jaw, none on vomer, palatine, bones or tongue. *Fins*—dorsal spines rather strong, the fourth and fifth the longest, from whence they decrease in length; rays shorter than the spines, the last two somewhat thickened but not scaled nor adherent together; Donovan observes that in his example there were thirteen spines and eleven soft rays in the dorsal fin, the same number being shown by the artist. Pectoral as long as the head. Ventral not extending so far as the vent. Third anal spine somewhat longer than the second. Caudal deeply forked. *Scales*—finely ctenoid, seven rows between the eye and the angle of the preopercle. *Colours*—orange-scarlet, becoming lighter beneath. A large black spot on the shoulder intersected by the lateral line, but is absent in the young. Couch believed that it does not appear till they are twelve months old. Day *Fishes of Great Britain and Ireland*, vol. I., p. 36.

BROADSWORD—This weapon—designed for both cutting and thrusting, but pre-eminently for the former, as the rapier for the latter—has been the typical arm of the Englishman for four centuries, during which it has varied considerably in form. In its early days it had only a plain cross hilt sometimes accompanied by an outer ring, and a double edged blade; it was then used for attack only, and the defence was made with its faithful companion the hand buckler. Later on, this little shield, being irksome to carry on the person, went out of use, and the sword had to be employed both for offence and protection. The masters of the Elizabethan period had to teach the use of "verie manye weapons" mostly accompanied by an arm of defence carried in the left hand, but among their lessons they all laid considerable stress on the management of the "short syngle sword," which in course of time came of necessity to be provided with a "close" or basket hilt. In the last three centuries we find but very few works on the subject. The men who practised the art professionally were rough fighting fellows, skilful in the use of their weapons, and some of them possessed of the rare faculty of imparting their knowledge to others, but they were mostly unlettered men and unable to record it in book form. What we know of the earlier stages of the art we owe mainly to enthusiastic amateurs.

We must consider first the man who should be regarded as the father of English broadsword play, George Silver, who published in 1599 a little book named *Paradoxes of Defence*, which contains interesting matter but no instructive details. He afterwards wrote—and wrote only, for the works exist but in MS. form—two other books, *Brief Instructions on my Paradoxes of Defence*, and *Rules of Defence to be observed in open Fyght, &c.*, which are full of clear and concise information. In Silver's time the *lunge*, as we understand it, was unknown. Two hostile men "drew on sight," they approached each other by "passes" or steps, each manœuvring to place his enemy in a disadvantageous position when he would make a sudden rush upon him. Silver advises three principal "fyghts"—we call them "guards"—although he had many others: the "*Gardant fyght is to carry your hand and hylt*

above your hed w^t your poynt downe towards your left knee, w^t your sword blade somewhat neer your bodye, not bearing out your poynt but rather declynynge it a little towards your said knee, y^t your enemye crosse not your poynt and so hurt you." The second is the "*Bastard gardant fyght, w^ch is to carry your hand and hylt below your hed brest hye or lower w^t your poynt downwards towards your left foot.*" The third is "*forehand, y^t is w^t poynts high, and hands and hylts lowe*"; in this guard the point was held quite upright. The "wards" or parries were made from these middle positions by moving the sword to the right or left, and they had no other distinctive names. Silver is the first author of any nationality who distinctly advocates parrying and riposting, to which he devotes an entire chapter "*of div^rs advantages y^t you may take by stryking from your wards at y^e sword fyght*"; and he also gives a chapter on "*The manner of certaine gryps and clozes to be used at the syngle short sword fyght.*" These grips were methods of overpowering the enemy by seizing his sword hand when he ran in close enough to make it possible. After Silver's day the lunge made its appearance, and the rough methods of running about and "charging" became tempered into the more refined school of later times. In the seventeenth century we find very little to help us. There appeared in 1639 a little book *Pallas Armata*, which treats of the sword, but is far less complete than Silver's *Brief Instructions*, and towards the latter end of the century we have the numerous works of Sir W. Hope of Balcomie, another famous amateur, who gives us, unfortunately, but very little of the broadsword. In the eighteenth century, however, we get more light in the beautiful album of engravings by Captain James Miller (1737) which relate to the work of the "gladiating" prize-fighters, who fought their battles with weapons sharp enough to cut the calf of a man's leg so badly that "it hung over his heel like a flap." We now find Silver's "gardant fyght" still surviving under the name of the "hanging guard" but with the point much more advanced than formerly. The gladiators held this guard in high contempt, dubbing it the coward's guard, being a good one for a timid man to shelter under, but a bad one



SWORD AND GAUNTLET.

for a bold man to attack from. Then we have Silver's "forehand," exactly reproduced under the name of the "medium," with varieties in the form of the inside and outside guards, in which the points were still kept very high though not "bolt upright." Concerning the practices of the gladiators we learn a great deal from another enthusiastic amateur, Captain John Godfrey (1747), a practical man who says, "I have purchased my knowledge in the backsword with many a broken head and bruise in every part of me"—in his day there were no such luxuries as fencing masks. In 1771 there was published a valuable though unillustrated work by A. Lonnergan, this time a professional, and certainly the most accomplished master of the gladiator period, for whose precepts Miller's beautiful plates still serve as illustrations. He embodies all Miller's ideas in a series of very practical lessons, and he also holds to some of the rough work of Silver's day, notably the blow in the face with the pummel. We now reach the closing years of the eighteenth century, when we have in 1798 the Angelo-Rowlandson *Hungarian and Highland Broadsword Exercise*, and Roworth's *Art of Defence on Foot with the Broadsword and Sabre*, neither of which differ materially in their methods from Miller and Lonnergan, and both of which contain the useful *Ten Lessons of Mr. John Taylor*, a sturdy swordsman of the good old school whose name is recorded only in these two books.

In 1804 a new edition of Roworth came out in which the "medium" guard disappeared, and in the "inside" and "outside" guards the point is lowered into the positions of quarte and tierce as now understood.

MEDIUM GUARD. (MILLER.)

In 1817 the first edition of Angelo's *Sword Exercise* was issued to the army by "authority," and after this point we notice the decadence of English swordmanship, when the teaching of it was taken out of the hands of the highly-trained fencing master and transferred to those of the mere drill sergeant.

In 1880, however, Professor J. M. Waite, a retired non-commissioned officer o the 2nd Life Guards, who, being of necessity much resident in London, was able to profit by gaining in

struction from two famous masters, M. Pierre Prevost and Mr. Platts, produced a highly practical manual *Lessons in Sabre and Single-stick*, &c., in which he dismissed the old hanging guard and retained the inside and outside, but used in preference to all three the "High Seconde" which was at that time the guard most in fashion; it was good to shelter under, but very fatiguing to the arm if maintained for any length of time. It is worthy of note that the fencing sabres used in Waite's day were very heavy, quite equal to the Infantry officer's sword, and his book was written with the view of training the swordsman for war purposes.

In 1889 I myself endeavoured to transmit in my *Cold Steel* the old English play with certain additions from modern Italian masters, especially Parise and Cesarano; but the engaging guard which I find most useful for general purposes is a "medium" I adapted from the "Guardia mista" of Alfieri (1640), in which the upper arm and especially the deltoid muscle is in very reasonable repose, and I added to this a "Resting Medium" with the sword hand lowered a few inches until the pummel rests on the thigh, which thus supports the whole weight of both arm and sword, and the man's physical resources are held in reserve until they are required for action.

Now compare this with the guard ordered at present by the military authorities, in which the arm is raised horizontally to the height of the shoulder, and is held quite straight, a position most fatiguing to any man not endowed by nature with a *deltoid* the size of a shoulder of mutton (p. 144). Which of these two guards, then, is the best for a man of ordinary physique? Then again, compare the *lunge* of the old school, which is that accepted by the French and most of the Italians, with the lunge as enforced in the army by the Adjutant-General at the instance of the professor selected by the War Office. In the former (p. 144), the body is upright and in perfect balance, the position best adapted for facility in recovery; and the increase of reach, gained only by stepping forward with the right foot from the position of guard, is twice the length of the sole of the foot. In the lunge ordered by the Adjutant-General (p. 145), the feet when on guard are in an unnecessarily wide position, so that the increase of reach obtained by the lunge is very slight, and the man is obliged to filch a little more by stooping forward with his body. The official instructions are, "push the body forward to the fullest extent," &c.; thus the trunk is "pushed" into a position actually out of balance, and can only be recovered by excessive muscular exertion.

The good sound English school still exists, and, despite their efforts, I do not think that would-be reformers will succeed in killing it.

ALFRED HUTTON.

GLOSSARY.

Advance—The advance is made when the opponent is beyond the reach of a lunge, and is effected by stepping forward with the right foot about six inches, and then bringing up the left the same distance.

Arrest—The arrest is a direct point delivered during the development of some action of attack.

Attack—The attack (or **appel**) is the preliminary tap of the right foot before attacking. It may be single or double. The latter is a beat with the heel and then the flat of the foot in rapid succession.

Backsword—Old term for Broadsword (*q.v.*).

Beat—A movement which strikes the opponent's blade, in order to force it aside, and thereby to acquire an opening.

Broadsword—A sword which is sharpened upon one edge and blunt upon the other, with the exception of a space extending some eight inches from the point towards the hilt. This is also sharpened, and is termed the **False edge**. Also known as **Sabre**, and formerly as **Backsword**.

Carry Swords—The order to hang the arm at full length, holding the sword upright, so that the edge faces

MEDIUM GUARD. (HUTTON.)

the opponent, and the back rests upon the hollow of the right shoulder.

Centre of percussion—"Is that part of the blade which should strike the object at which the cut is directed. It is situated at about three-quarters of the length of the blade from the hilt. A cut given with any part of the blade above or below this point loses its effect from defective leverage."—(*Fixed Bayonets*, Hutton.)

Commanding is the seizure of an opponent's weapon or person. Now obsolete.

Corps à Corps—The term used to describe the position when the combatants have come so close that they can grapple with each other.

Counter—A hit delivered at the same moment as an opponent's. Similar to a counter in Boxing. Also used as verb.

Counter-time—A blow delivered at an opponent's arm, when he attempts a **time-hit** (*q.v.*).

Cut.—A stroke delivered with the edge of the sword. There are seven primary forms:—

(1) A diagonal downward stroke at the left side of the opponent's head.

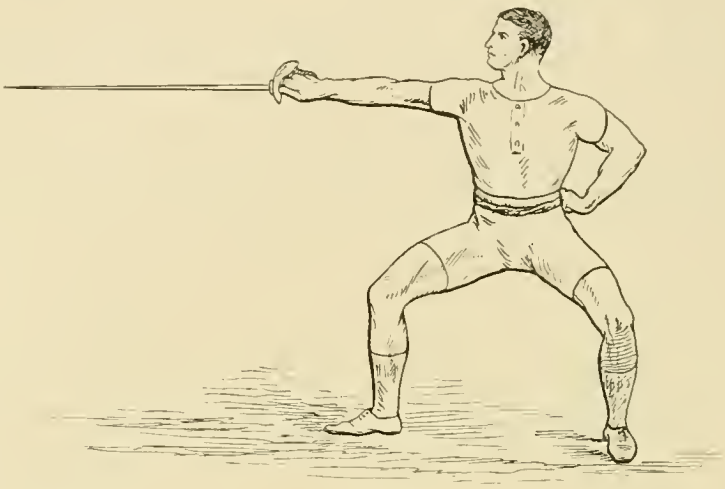
(2) A diagonal downward stroke at the right side of his head.

(3) A diagonal upward cut at the inside of his right knee.
(4) A diagonal upward stroke at the outside of his right knee.
(5) A horizontal stroke at his left side.
(6) A horizontal stroke at his right side.
(7) A vertical downward stroke at his left side.
An eighth is sometimes added by Italian swordsmen :—
(8) A vertical upward stroke at the fork.

variety of this is the **Low Hanging Guard**, in which the arm is held lower, but the sword points in a similar direction.

(3) The **Inside Guard** formed by keeping the wrist about the level of the waist, and the point about the level of the eyes, with the edge turned inward.

(4) The **Outside Guard** is similar to the above, except that the edge is turned outward. The special



Military Guard.

Cutlass—A short broadsword chiefly used by sailors and marines.

Disengage—To quit that side of the opponent's blade on which one is opposed by his guard, in order to effect an attack where there may be an opportunity.

Distance—[*See* Measure].

Draw—A deliberate exposure of some point in order to attract the opponent into delivering a stroke, for whose defence and reply one is fully prepared. Also called **Invite**.

Draw swords—The order to draw the swords from the scabbards and range them perpendicularly with the full stretch of the arm, the edge being to the rear.

Drawing cut—A stroke in which the edge, instead of falling motionless, moves along the surface which it meets, thereby increasing its cutting power.

Engage—To touch the opponent's sword as a preliminary to a contest, in order to ensure the readiness of both.

Engaging guard—[*See* Guard].

False edge—[*See* Broadsword].

Feeble or **Foible**—The half of the blade from the point, which is the weaker.

Fort or **Forte**—The half of the blade from the hilt, which is the stronger.

Gain—A swordsman is said to make a "gain" when after a lunge he recovers his position, not by withdrawing his right leg, but by bringing up his left.

Grip—That part of the sword which the hand grasps.

Guard—The position of body and sword which is safest for defence and most ready for attack. There are four chief guards to one or other of which the swordsman should constantly return after an interchange of blows, and these are known as **Engaging Guards**.

(1) The **Medium Guard**, in which the elbow is about in. from the right hip, the edge inclined downward, and the point towards the opponent's face.

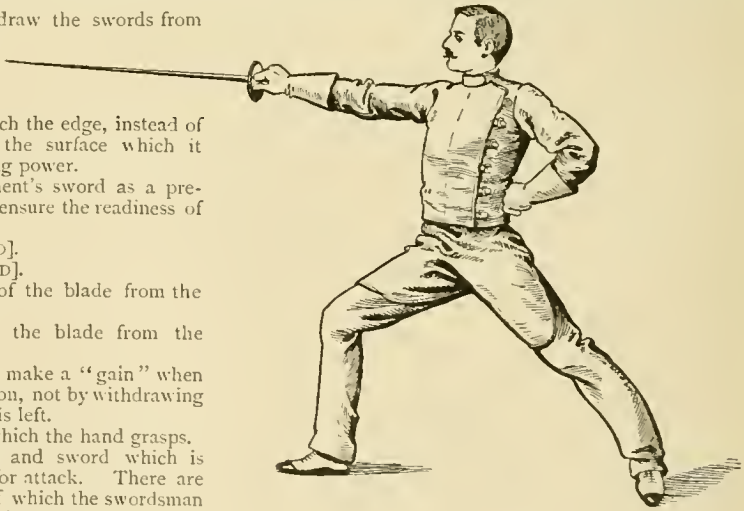
(2) The **Hanging Guard**, where the arm is raised above the head, the edge of the sword upward, and the point directed downward and toward the left. A

defensive movements against the various cuts are sometimes called "guards," but are more properly Parries (*q.v.*).

Hilt—The part by which the sword is grasped, and which affords protection to the hand.

Invite—[*See* Draw.]

Loose Play—A contest in which the combatants deliver strokes and effect parries, not in any regular sequence, but as they think each may be most effective.



The Lunge. ("The Swordsman," 1891.)

Lunge—The completion of the attack, which is effected by stepping forward with the right foot two soles, length beyond the position of guard.

Mask—A helmet of wire netting protecting the face from injury, but giving full sight of an opponent.

Measure—The exact space in a direct line between the combatants, which must be traversed by a lunge. Hence **Perfect Measure** is when an opponent can be fairly struck without previously moving the left foot. **Out of Measure**, when one must advance at least a step to touch an opponent. **Within Measure**, when one can touch an opponent without lunging. (Also called **Distance.**)

Moulinet—A rehearsal of various cuts in one continuous swing of the sword.

Opposition—The covering one's self with the **Shell** (*q.v.*) of the sword when making an attack, so as to ward off a counter hit from an opponent.

Parade—[*See* PARRY].

Parry—A defensive movement against some particular stroke of an opponent's ; sometimes confined to a defence against the point.

Retire—To give ground intentionally by withdrawing the left foot six inches, and bringing the right a similar distance after it.

Return—A blow delivered immediately after parrying an opponent's blow, also called **Riposte.**

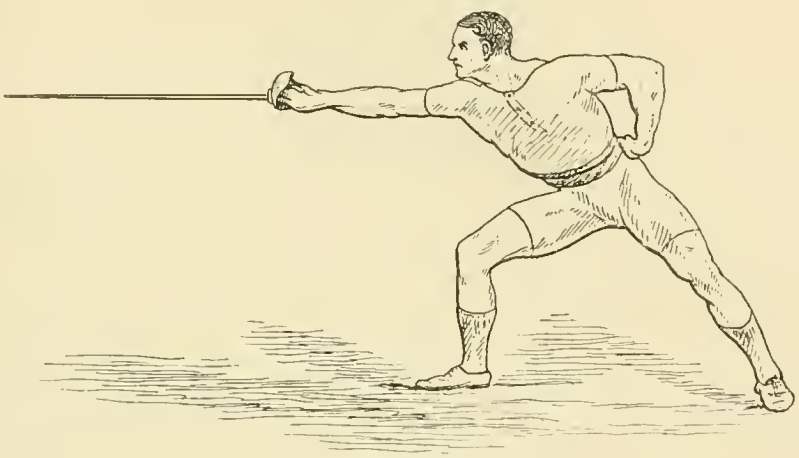
Return swords—The order to replace the swords in their scabbards.

Riposte—[*See* RETURN].

Sabre—[*See* BROADSWORD].

Saint George—The special name attached to the seventh parry (*q.v.*) which guards the head.

Shell—The part of the hilt which protects the hand from injury.



THE LUNGE. ("INFANTRY SWORD EXERCISE.")

The parries in reply to the Cuts (*q.v.*) are

Against Cut	1.	Parry	quarte.
,,	,, 2.	,,	tierce.
,,	,, 3.	,,	septime or low prime.
,,	,, 4.	,,	seconde.
,,	,, 5.	,,	low quarte or prime.
,,	,, 6.	,,	low tierce or seconde high.
,,	,, 7.	,,	high quartre or high tierce, or the St. George.
,,	,, 8.	,,	horizontal quarte.

Pass—The pass is the stepping forward with the rear foot and bringing it one pace in advance of the other. Now obsolete.

Point—A thrust delivered with the point of the blade. There are two chief forms.

(1) Delivered with the hand in supination.

(2) Delivered with the hand in pronation.

Pronation—The position of the hand when the knuckles are uppermost.

Pummel—The lump of steel at the end of the hilt which balances the weight of the sword.

Recover swords—The order to drop the wrist from the "draw swords" position, to the level of the chin, the blade upright, and the edge to the left.

Redouble—To deliver a second blow very quickly after recovery if the opponent does not at once make a Riposte (*q.v.*) after parrying the first. Not to be confused with **Remise** (*q.v.*)

Remise—A second stroke made upon the same lunge as the first, when an opponent does not reply at once after parrying.

Reprise—"This word has three meanings: 1st, in an assault it is a second thrust made on the same lunge, but after having previously found the opponent's blade ; 2nd. in a treatise on fencing it is a term applied to a series of set lessons, such as 'les quatre reprises de Jean Louis ;' 3rd, in a duel it means a series of attacks, parries and ripostes which occur whether ending in a hit or no."—(*Fixed Bayonets*, Hutton.)

Slip—To withdraw the part of the body at which an opponent aims in order that, finding no resistance, he may overbalance himself, and give an opening for a cut.

Slope swords—The order to carry the weight of the sword upon the right shoulder, the elbow close to the body, and the arm bent straight forward at a right angle.

Spadroon—A light broadsword, now obsolete.

Stop-thrust—A thrust delivered at an opponent at the moment when he advances for the attack.

Supination—The position of the hand when the palm is uppermost, or, if the fist be closed, the nails.

Tang—The narrow piece of soft metal which is attached to the blade of the sword, and fits into the hilt.

Target—A circular or oval piece of wood or linen about 14 inches in diameter, with the cuts and guards marked upon it, before which the learner can rehearse by himself; also that part of the body and limbs on which hits are allowed to count.

Thrust—A stroke delivered with the point and not the edge of the sword.

Time cut, hit, or thrust—The putting in of a cut or thrust at the exact moment when the opponent is shifting his position, especially when he does so in preparation for an attack. To be distinguished from a **Counter**, which is a stroke delivered, not before, but at the moment of, an opponent's attack.

Transport—"The transport is the passing of an opponent's blade from one position to another, describing a conical movement." (F. V. Wright.)

Traverse—The traverse is a shifting of the ground circular-wise to either side, and is effected by moving either foot outward a distance of six inches, and bringing the other opposite to it.

Under Stop-thrust—A thrust delivered to meet an

opponent's advance, the left foot being allowed to glide backward, and the whole weight falling on the right leg.

Volte—Any sudden leap to avoid a stroke. Especially a turning of the whole body upon toe or heel.

A. B.

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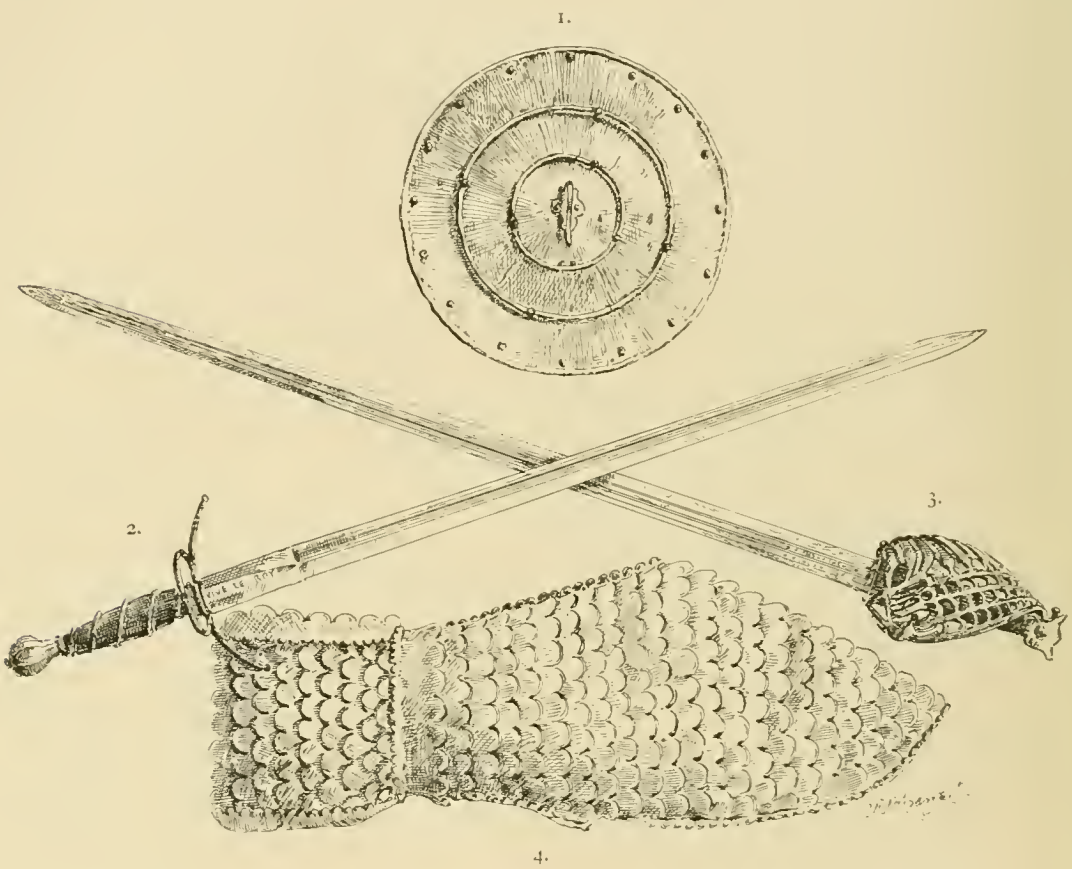


1. Hand Buckler, Time of Henry VIII., with Sword-breaking Rings and Belt-hook.
2. Double-edged Broadsword, Time of Henry VIII.
3. Basket-hilted "Schiavona," 17th Century.
4. Great Parrying Gauntlet of Buff Leather, worn on the Left Arm. (*See* p. 141.)

BUFFALO, CAPE (*Bos caffer*)—Zambesi name, *Nyati* or *Mboga*; Bechuana name, *Nari*. Height, 4 ft. 8 in. to 4 ft. 10 in. Body massive and covered with black hair. Skin of belly and inside of thighs a blackish red, very sparsely covered with hair.

The horns of an average full-grown bull should measure 36 inches in width (outside measurement) across the widest part; 25 inches from tip to tip, and 14 to 15 inches depth of palm at base.

The African Buffalo is generally described as the most savage and vindictive of all ruminants, but it is doubtful whether he fully deserves this character. His aspect is certainly ferocious, but this is caused by the massive weight of his body, the great breadth and thickness of his heavy horns, and especially by the savage expression of his little bloodshot eye. Unless wounded or suddenly disturbed, a Buffalo will seldom charge. As a rule, whether come upon singly or in a herd, they prefer to seek safety in flight; but a cow with a calf will often charge, and keep on charging after the remainder of the herd has fled. Old bulls which have been driven out of the herd and compelled to wander about alone, or in company with two or three other unfortunates, will occasionally charge if suddenly disturbed; and many a hunter has found himself in an unpleasant position on coming suddenly and unexpectedly in front of an old bull standing dozing in high grass. The first impulse of the startled animal is to rush blindly forward, and whatever happens to be in

the way has to go, as nothing weaker than a wire rope will stop him. Except from cows when they have calves running by their sides there is no danger in approaching a large herd of Buffaloes in the open; and the bigger the herd the less the likelihood of a charge. In 1894 the writer, accompanied by two native boys, came across a herd of fully 700 Buffaloes feeding on the short grass of the Manamtoi plains near Sarmento. Burchell's Zebra, Blue Wildebeeste, and Lichtenstein Hartebeeste were feeding with the Buffalo, each species keeping pretty well together.

Not being in want of meat, and having already secured several good heads the writer walked out of the high grass which fringed the open plain on which the game was standing, and made straight for the dense mass of animals; without any intention of firing a shot, and merely to see how near they would allow him to approach them in the open. The Zebra and the Wildebeeste were the first to run; the former with many a kick and prance, and the latter frequently halting in their lumbering gallop to wheel round and toss their comical heads; but after both Zebra and Wildebeeste had disappeared into the high grass and palm scrub, the Buffalo remained standing motionless, with noses pushed forward, gazing stolidly at the writer and his two boys as they walked briskly towards the herd. Not until we were within 120 yards of them did they move, and then of a sudden they wheeled round, and the forest of evil looking heads and horns in front of us was transformed into a mass of black sterns and waving tails rapidly retreating amid a cloud of dust. Not one of these evil-looking brutes thought of charging the three

CAPE BUFFALO.

Ht. at shoulder, 4 ft. 9 in. Av. horn meas. 36 in. Max. horn meas. 49½ in.

attenuated and fever-stricken bipeds who walked up to them in the open.

But in the case of a *wounded* Buffalo it is a totally different affair. It is then that the almost supernatural cunning and devilish ferocity of the animal shows itself. A beast is hit, perhaps only an inch or two from a vital part (or he *is* hit in a vital part by a bullet from that questionable implement the ·303 rifle), but not dropped, and disappears in the high cover. Beware then how you follow him: for while you and your boys are slowly picking out the blood spoor with eyes fixed on the ground, watching for the red splashes on the grass, the brute will have run back 100 yards or more parallel to his for-

ward tracks, and is lying in wait ready to spring up and charge out on you as you come opposite him, and the odds are that he is upon you before you have time to raise your rifle. The sense of smell possessed by Buffaloes is very acute, and when wounded they will hunt a man through thick cover by this means just as a spaniel will follow the track of a rabbit; but the Buffalo, unwieldy looking though he be, is far quicker than the spaniel, and as long as a trace of scent remains he will follow it, eager to avenge, while his strength remains, the death wound he feels he carries in him.

A Buffalo does not charge blindly with head down, as do the European members of the bovine family. He carries his head at an angle of only a few degrees off the horizontal, and it is only at the moment of striking that the head is lowered and the horns brought into position for a sidelong thrust—consequently a charging Buffalo offers very little chance of being stopped by a bullet, even if there is time to aim; for, though he may be struck on the very small mark offered by the lower part of the forehead where unprotected by the massive horns, the bullet (if of ordinary calibre) is certain to glance off owing to the angle at which the head is carried. The nose is the part to aim at; for even if the brain is not touched by this means, the bullet will penetrate the neck and chest, and so disable the animal as to stop him in his charge. If a wounded Buffalo escapes into thick bush or high grass the wisest plan is to wait an hour before following him. He is certain to lie down before going far, and will become weak and stiff from loss of blood, and therefore less likely to make a sudden charge.

The greatest caution should be exercised when approaching an apparently dead Buffalo. So long as the slightest movement of the sides (caused by respiration) is visible he is capable of staggering to his feet and annihilating his pursuer. The writer once had a narrow escape in this way. Being in want of meat for the camp he went out in the early morning to secure it, and from the top of an anthill sighted five Buffaloes on a small patch of short grass, slowly feeding towards some heavy thorn and palm scrub in which they probably intended to lie up during the heat of the day. It was easy to run through the long grass up to within forty yards of them, and a bullet from the first barrel dropped a cow stone dead, while that from the second barrel appeared to have the same effect upon a scarcely full-grown bull, for both animals rolled over and lay motionless. The cow was inspected first, and proved to be dead, but on getting within twenty yards of the young bull he scrambled to his feet and charged. A hurried shot aimed at the nose hit the base of his left horn and glanced off into the air with a loud hum, doing nothing towards checking him in his charge. The second barrel drove a bullet through his nose, chest, and intestines, smashing the heart, killing him instantly, and causing him to turn a complete somersault. His rump hit the writer a heavy blow on the face and brought him to the ground with a bloody nose and cut lips. The incident probably occupied no more than ten or fifteen seconds; but it seemed longer to the writer; and ever since then he has been very careful, when walking up to an apparently dead buffalo, to do so from *behind* the animal. In this case the first shot of all (which brought it to the ground) was found to have struck forward of the shoulder, grazing the vertebræ of the neck, and causing temporary paralysis, without otherwise injuring the beast.

The rifle used in this instance was a double ·500 bore Express, by Westley-Richards, carrying the long 570 grain soft lead solid bullet and 120 grains black powder. It is the best weapon for general purposes, but hardly heavy enough for the larger descriptions of African game. The rifle most suitable for Buffalo is the ·577 Express, using 6 drams of black powder and a solid 648 grain soft lead bullet. The 10 bore paradox gun (made by Messrs. Holland and Holland) is also an effective weapon in bush country where shots of no greater distance than 70 or 80 yards are likely to be called for. Nothing of less calibre than the ·500 bore should be used on Buffalo; and it is scarcely necessary to remark that the use of hollow bullets is dangerous on these heavy and thick-skinned animals.

When stalking Buffalo, the hunter should always endeavour to reach a position from which he may obtain a fair broadside shot, and then put his bullet *rather low down* immediately behind the shoulder. This is the most effective shot, and indeed the only one almost certain to be fatal; but it frequently happens that natural obstacles, such as tree stems, grass, &c., prevent the hunter from getting a sight of anything but the head and neck. The neck shot may then be attempted, if the animal is standing broadside (or nearly so) to the hunter, but caution must be exercised in approaching it, although it may have dropped instantly to the shot, for a bullet in the neck is seldom fatal unless the vertebræ are broken.

Until recent years Buffaloes were to be met with in vast numbers all over Southern and Eastern Africa, but the advance of civilisation has caused their gradual disappearance from Cape Colony, Natal, and the greater part of the Transvaal; while in South, Central and Eastern Africa they have been greatly reduced in number by the outbreak (in 1890) of an epidemic disease closely resembling anthrax, which rapidly decimated the vast herds which, up to that date, were to be found in those districts. Two years subsequent to the appearance of this disease (viz., 1892), when a railway surveying party were at work in the Kilimanjaro district, no Buffaloes were seen or killed by

the hunters attached to the expedition, but the ground was thickly strewn with the skulls of those which had succumbed to the epidemic. It is to be hoped that the disease has not penetrated to the more northerly districts of German East Africa, and that a sufficient number may have been left there to ensure the eventual restocking of the districts which have been ravaged by it; but many years must elapse before the hunter can again encounter vast herds of these noble black cattle similar to those which until 1890 roamed at will through the swamps and high grass of this part of Africa. A few herds are still in existence in the bush country adjoining the sea-coast near Port Elizabeth. These are protected by the Cape Government, permission to kill a limited number being occasionally given, but the bush is so dense and the animals so wary that it is difficult to obtain a shot.

In the Transvaal only a few small herds are to be found along the banks of the Olifants and Limpopo Rivers, and it is probable that they will continue to exist for some years to come, as they keep to the Tse Tse fly district, and are therefore free from molestation by Boer skin-hunters, who never hunt on foot, and are of course unable to take their horses into the fly country.

In North Matabeleland and Barotzeland Buffaloes still exist in considerable numbers, and in fact all along the Chobé and Zambesi Rivers herds numbering up to two hundred are met with: but it is in the low, swampy country adjoining the coast line between the mouths of the Zambesi and the Limpopo that they are still to be found in herds numbering occasionally as many as one thousand animals.

The district around Beira (in Portuguese territory) is without doubt the finest hunting ground in Africa for Buffalo, and indeed for almost every description of African big game.

In the flat swampy lands on each side of the Pungwé, Busi, and Urema Rivers, Buffaloes are to found in great numbers, and sportsmen desirous of experiencing the excitement of Buffalo shooting on foot, and in high grass, cannot do better than proceed to Beira, *via* the Cape, there hire a flat-bottomed decked boat, and proceed up the Pungwé River. Stores can be purchased in Durban; but a Weissman tent should be brought out from England, so that excursions inland of three or four days, or more, can be made from time to time.

The country is, for the most part, covered with dense grass from seven to ten feet high, which makes it almost impossible to see the game until close upon it; but open spaces occur every now and then on which the grass is short and sweet. It is upon these open glades that the game is to be found feeding in the early morning. As soon as the sun is up the Buffaloes and antelopes retire into the shade of the high grass and palm trees, and it is then difficult to see or approach them.

One of the flat-bottomed boats obtainable in Beira makes a fairly comfortable home. The hold is divided into a forward and an after cabin, the former being used by the crew, and the latter by the members of the shooting party. There is room to stow a large number of trophies; and the great expense entailed by the large number of carriers required for a trip by land is saved. Such a boat can be hired in Beira (inclusive of crew's wages) for £35 a month; whereas the wages and food of, say, sixty native carriers required for a purely land trip would amount to £80 a month. The Pungwé River is navigable in a flat-bottomed boat nearly as far as Sarmento, a distance of one hundred miles from Beira; but it is unnecessary to push so far up stream. At 'Mpanda (fifty miles up the stream from Beira) the river divides, the right-hand stream being named the Madinguedingue and the left the Pungwé. These streams again unite about twenty-five miles further north, thus enclosing a large tract of flat swamp land which is full of Buffaloes and other game. The Urema River joins the Madinguedingue ten miles above 'Mpanda, but is too shallow for navigation in a large boat. By means of canoes (which can be hired at 'Mpanda) it is possible to ascend the Urema River and so reach Barrato's Kraal (distant about forty miles from 'Mpanda), and from there the Lake Sangue district can be hunted. Here Buffaloes (and, in the months of September, October, and November, elephants) are to be found in vast numbers. Barrato is a half-caste Portuguese, and chief of a large native tribe. He is hospitable to Englishmen, and generally willing to give them permission to shoot in what he considers his territory. He has fifty or sixty native hunters armed with good guns engaged in ivory hunting; and when staying at his kraal in 1894 the writer saw about 1,000 lb. of ivory which had been brought in by these men during the previous hunting season.

Buffalo and other game are numerous also along the Busi River, up which a trip could be made by boat from Beira.

The country lying on each side of the Sabi River (which runs into the sea about sixty miles south of Beira) is also good buffalo ground.

The whole of the country above referred to—viz., that lying between the mouths of the Limpopo and the Zambesi Rivers (roughly four hundred miles of coast line)—is within the Tse Tse fly belt; so no domesticated animals can be employed, and all stores and baggage have to be carried by native bearers; while the European sportsman has to walk every inch of the way. It is also the most unhealthy and worst fever country on the East Coast. Sport is therefore attended with more hardships and sickness than in other parts of Africa; and it is to be hoped

that by reason of the deadly climate and the difficulties of travelling through such a country, it may long remain, as it is now, the finest Big Game preserve in the world. During the rainy season no European could survive the dangers of the climate, and it is only in the months of August, September, October and November that it is possible to travel through the country. The date of commencement and the duration of the dry season are very uncertain, but the probabilities are that at some period during the four months referred to, the grass will be dry enough to burn; and when this is possible, grand sport may be obtained. Within four or five days, after the heavy grass has been burnt off, the young green blades shoot up, and the game flocks in from all directions to feed upon it. It is then easy of approach under cover of the unburnt grass and scrub.

A. M. NAYLOR.

INDIAN BUFFALO.

Ht. at shoulder, 5 ft. Av. horn meas. 50 in. Max. horn meas. 77½ in.

BUFFALO, INDIAN (*Bos bubalus, vel Bubalus arni*)—The vast tracts of swampy jungle at the foot of the South Eastern Himalayas, the Delta of the Ganges, and the plains of the Central Provinces, drained by the Mahanadi and its tributaries, comprise the districts which the Indian Buffalo frequents.

The wild animal differs but slightly in appearance from his tame congener. He looks plump and well cared for, instead of being lean and scraggy; and his nice brown coat and tidy white stockings, as compared with the patchy tints of so many of the domesticated kind, only mark the difference between the free man and the slave.

The usual habitat of the wild Buffalo being swampy ground covered with tall reeds, they are chiefly hunted on elephants; and the density of the cover may be imagined when (as the writer has sometimes experienced) the sportsman, standing up in his howdah, can see nothing of the elephants on either side of him, though only some fifteen yards away, the top of the reeds being higher than his head.

Buffaloes roused by a line of elephants frequently show fight, a solitary bull, or a cow with a young calf, being especially pugnacious: the bulk of the animal and the short range at which the action is fought (generally fifteen to twenty yards) render effective shooting fairly easy, particularly with staunch elephants; but large bore

rifles, taking heavy charges, should be used for these as for all other thick-skinned game.

An occasional stalk on foot may sometimes be indulged in, where broad sandy river beds divide the masses of heavy cover, as Buffaloes frequently come out on to these to drink and wallow in the clear water. As, however, a wounded beast invariably betakes itself to the thickest cover near, elephants are necessary to follow it up and bring it to bag.

On the plains of the Central Provinces the grass during the hot weather is less dense; and as a great deal of it is regularly set on fire by the villagers every year to produce better grazing, Buffaloes may be regularly hunted on foot without the aid of elephants. Water at that time is scarce, being only found in pools along the river beds, and the game is consequently confined to its vicinity. Good trackers are indispensable for this sport and, given these, the best thing that the sportsman can do is to interfere with them as little as possible; they should be allowed to go ahead and carry on the trail, the sportsman remaining fifty or a hundred yards behind them till the game is sighted, when they should be placed in safety, and the hunter undertake the action.

The chief reason for this mode of procedure is that few Europeans have the keen senses of sight and hearing that jungle-bred natives possess; their movements are also attended with a certain amount of noise, and their presence tends to distract the trackers, who have not the smallest intention of blundering into close quarters with a dangerous animal, and to whom every sign and sound are of the gravest importance.

Naturally the above only refers to tracking an unwounded animal, as, after a beast has been fired at, the trackers must be accompanied by and protected by the sportsman.

Buffaloes thus tracked, and stalked in the early mornings while they are feeding, seldom give much trouble; they are fairly easy to approach. Usually a deliberate shot may be obtained at about fifty yards range, and a heavy bullet, well placed, knocks the fight out of them at once.

A single bull is always easier to tackle on foot than a herd, as the smell of blood from their stricken comrade may, and very likely will, make them charge *en masse* if they happen to detect the firer. Forsyth in his delightful book, *The Highlands of Central India*, gives a vivid account of how he and his gun-carrier had to effect a retreat on account of the threatening demeanour of a herd whose leader he had shot. "A semicircle of pawing hoofs and snorting nostrils, surmounted by forty pairs of monstrous horns," was certainly formidable odds against two men in grass three feet high. When, however, he opened fire again from a more secure position, the buffaloes seem to have made no attempt to attack, but took to flight after a few shots had been fired at them. Williamson, in his *Oriental Field Sports*, written at the commencement of the century, narrates many quaint adventures with Buffalo, which he held in great respect; but it must be remembered that there is a considerable difference in power between the ball guns of those times and the heavy rifles of the present day. He gives a capital account of hunting Buffalo from boats, during the inundations of the Ganges. He describes the hunters as a motley gang of villagers, armed with matchlocks, swords, and spears, mobbing in the water the various animals that had taken refuge on the islands which were gradually being submerged. The Buffaloes, from his account, appear to have been almost harmless, as long as they could be enticed into water deep enough to hinder them from lowering their heads to use their horns.

This sport in a higher form has on several occasions been enjoyed in the Sunderbunds, or Delta of the Ganges, during the rainy season. The sportsmen usually engage a large boat to live in, with small boats attached, in which they are able to follow the smaller watercourses, and so penetrate a considerable distance among the swamps and islands that Buffaloes frequent. The sport is described as magnificent, wounded Buffaloes often charging up to the boats, and requiring heavy metal and straight shooting to stop them.

But the writer has never heard a single instance of one of these parties having escaped malarial fever, and usually the expedition has been forced to return after a brief sojourn in that deadly district, paradise of sport though it be. The absence of wholesome drinking water is the chief cause of jungle fever, and though the Europeans may escape fever by taking extraordinary precautions, their native servants are almost sure to be attacked by it.

R. Heber Percy.

BULLS AND BULL-FIGHTING.—Although Bull-Fighting is not a sport in which Englishmen commonly engage, it may fairly, as the national pastime of more than one European country, claim a place in an Encyclopædia of Sport.

From the time when the young bull is tended on Andalusian plains to the closing moments of his life in the National *Corrida*, a vocabulary of special words, a separate form of expression illustrates the science of all pertaining to *Tauromachia*. In Spain these terms form part of current expression, as the bull-fight forms part of current existence. This, without penetrating to the inner life of "the fancy" where a language half gipsy, half slang—rich and racy as you please—is the medium of the Matador and his *entourage*. For the hybrid lingo of this set no equivalent could be found, but for some tech-

nical terms of the art it is necessary to give a fairly accurate rendering. This, when possible, will be attempted.

The river Guadalquivir after passing Seville forms between its different channels the islands known as Isla Mayor and Isla Menor, and these islands are in their turn subdivided into the far stretching plains of Las Cabezas and Lebrija. It is from the fine herds of fighting cattle specially bred on these plains, that the bull-rings all over Spain are principally supplied. On the adjacent *vegas* of Utrera, are the herds of Muruve and Miura, this last of singular ferocity and sinister reputation. Three times in recent years have *Toros de Miura* overmatched their foes. Thrice has the life-blood

Matadors mingled with this *sangre fiera* in open fight. The classic arena of Madrid bore witness to their death-dealing horns, when the Cordoba man José Rodriquez (Pepete) fell, to be followed later by Mariano Canete. The shock which galvanised the public there on the 27th of May, 1894, when poor Espartero died, yet seems to thrill all Spain, for he was a universal favourite. Besides the Seville owners there are breeders in various parts of the country. The bulls are kept separate from the cows in enclosed pastures, each calf (male or female) being given a name at birth and entered in the herd-register. When the calves are a year old, the branding process takes place. This forms almost as important an epoch as the trials for courage which take place later on. It is a rural festival, and a kind of open house is kept at the ranch during the days it lasts. A year passes, or even two, before any further steps are taken with the young stock. In some herds they are tested at two, in others at three years of age. The separation has then to be made between the good and the bad, or in other words, "the cowardly and the courageous"; those which the overseer passes as good, return to their pastures, while those found wanting are condemned to the slaughter-house or the ploughshare. This *tentadero* is again a *fête*, crowds appear, the amateurs are now expected to take an active part, and he who would pose as a sportsman must be more than a fair rider and bestride a speedy nag well broken to the work. With the assistance of a number of trained oxen (each carrying a large bell) the youngsters are herded up on the plain, which extends as far as the eye can reach and offers no impediment to a race between mounted men and themselves. Half the "decoy" cattle are then removed from the mass and rounded up at some few hundred yards' distance. The owner, overseer, and his friends, each wielding a heavy wooden lance, called a *garrocha*, some twelve feet long, with short blunted metal point, similar to that used in the bull ring, rein up their horses for a start, with them being also a professional spearman (*picador*). On a given signal, the herdsmen who are surrounding the beasts to be tried, allow one of the animals to escape, whereupon he or she, for the two sexes are tried indiscriminately, makes headlong for the distant group of tame kine. Immediately two spearmen urge their horses in pursuit, one lying on either side and each riding hard to get in first lance: he on the right endeavours to place his spear, if one may call it such, on the bull's right flank and he on the left *vice versa*. If successful the bull is thrown to the ground; he rises, again to start and once more to be overthrown; then, infuriated, he turns to face his pursuers. These give way to the professional spearman who, with couched lance, awaits the onset. The beast charges repeatedly if he be of the right sort: each time baffled and kept at spear's length, as the metal point fixes in his withers. It is at this critical moment his fate is decided. By the number of times he faces the spear, so is his merit recorded. An inferior or soft animal will refuse, or charge but once, the pluckier ones attacking repeatedly. The whole herd is tried in the same manner. The horsemen, mostly friends of the owner, take their turn in pairs to wield the lance. Bad falls are not infrequent.

The ordeal to which the young bulls are subjected is sometimes even further extended by men on foot giving them *pases*. To "pass" a bull is to induce him to charge by holding open before him some coloured material, which may be a rug, a cape, or something similar. As a matter of fact, the lures used in bull-fighting are made in the shape of a cape, so that when not in use they may be worn by the expert. When the bull lowers his horns in the charge, the texture is cast on one side or the other, the bull follows it and the man is safe. A bull will be brought to the charge several times before he tires of the intangible result. Many breeders condemn this practice, and consider that no bull should be "cheated with the rag" till necessary in the bull-ring. It is easy to understand that he would learn before long to leave the shadow for the substance. Instances of "educated" bulls, which have been extremely dangerous to the matador, are not wanting.

The selected bulls pass two years uneventfully, until at four or five years of age they are ready for the ring. They are now worth £40, £60, even £70 each, according to the reputation of the herd, though bulls for a *novillada* or second-rate bull-fight cost far less. The breeder's liability does not end until the bulls sold are safe in the ring, or in the railway station booked for a distance. In the enclosures or "surrounds," some of which are many thousand acres in extent, curious scenes are sometimes witnessed. Thus, two bulls fight, and the entire herd ring them round to look on. The loser is pursued by the rest, is badly hustled, sometimes killed. Even if not, the beast will ever after be of evil temper; boycotted by the others, he keeps him-

self aloof from them. This moroseness is also noticeable in bulls which are sick, lame, or wounded. Another curious fact, in an enclosure containing eighty bulls or more, there is always one master of the rest—one Cæsar. This continues till the herd will stand it no more; then six or seven unite, and together attack the tyrant and kill him. The whole herd then surround the defunct and bellow mournfully, until the stockman removes the body.

The enclosure which contains the cows with the calves is very dangerous ground; should you draw their attention the whole lot will be upon you instantly, and, unless you can put the fence between you and them, you are in a bad way. If caught in the open there is one means of escape, which is to seize a calf, and, keeping it between you and the infuriated cows, to edge back to the railings; as long as you are thus protected you are safe. In entering an enclosure of fighting bulls always keep near the railing or the riverside, even should they be near the former or drinking in the latter—never pass behind them in such a way as to

block their escape. If they should stop and look at you, as they will do after moving a few steps, continue your way and do not stop; barring the sullen, solitary animals mentioned previously, there is no danger of a charge. The better bred they are the quieter they will be in the pastures. When a contractor comes to buy bulls for a *corrida*, or fight, he or his deputy rides through the enclosure with the overseer, and picks out what he wants; these are driven by the stockmen into a separate enclosure by means of the decoy cattle, *cabrestos*, which go with them. They are then driven by easy stages to the town of the fight, following the decoys without a thought of evil, and rest on some pasture in the neighbourhood.

Apart from the bull-fight proper and preceding it by some eight or ten hours there takes place in the same locale a diversion called the *Brandy Bull*. Early in the morning an animal of inferior quality, but possessing most of the attributes of the fighting class, is loosed in the arena. The points of its horns are bound in wooden knobs to prevent loss of life. The public is admitted on payment of a sum equal to about twopence; and any one may jump into the ring and try his hand with a *capa*, that is, draw the attention of the bull to himself. All the rabble of the town is present, and accidents (principally from the throng of people in the ring) are frequent. The bull sometimes gets his horns free, and then many serious wounds are given. After an hour of this baiting, the animal is removed and killed outside. This early excitement puts the people in a suitable frame of mind for the anticipation of the professional contest to take place in the afternoon: as the *corrida* always occurs on holidays, the whole time is absorbed by its ever renewed interest.

With the first morning light the bulls and their "traitorous kin" are roused by shouts of mounted men. Soon the whole herd of bulls and decoys is rattled along the lanes and byways, at a gallop, in the direction of the bull-ring. The horsemen are assisted in this operation, called the *encierro* ("enclosing"), by numerous amateurs. As the ring is approached the road is enclosed by strong post-and-rail fencing. At the end of this open the wide doors of the *toril*, or circular corral surrounded by high solid walls. Through the opening rush the herd, *cabrestos* and *toros* together. The wide door swings to, and all are safe. A passage leads from the corral to the bull-ring, and one by one the animals are admitted to this section. Doors swing conveniently open before each *cabresto*, and he walks quietly to liberty without, free to betray once more. An equally convenient door opens before each bull, but not to liberty. Snorting and panic-stricken, impatient of control, he follows the opening way. Onward through secret panels till he can go no further a bolt is drawn, a wall falls behind, and he is caught. Between his cell and the arena there is but a board.

The arena, or *redondel*, may be seventy yards across or less. A barrier of wood about six feet high encircles it; then comes a corridor of seven feet, round which the first circle of seats are ranged. These are the places sought by the foremost patrons of the sport. The space between the two circles is called *entre barreras* ("between barriers"), and here in this corridor the bull-fighters not actually engaged in the fray stand at rest; it is here also that the police and the military have their representatives. So, when a bull jumps the barrier, as frequently happens, an amusing *sauve qui peut* occurs. Then the track is closed by throwing a section of the inner barrier to the outer circle, forming a stop. The bull is thus compelled to return to the arena. Some rings are provided with upright screens of wood called *burladeros*, placed at intervals close to and flush with the barrier—a refuge for the experts when hard pressed. From the first row of seats, or *tendidos*, the lines rise in widening circles back to the enclosing walls of the *plaza* or bull-

ring. All is open to the sky except on the shady side of the amphitheatre, where a roofing covers the privileged seats at the top, the boxes and presidential balconies: as the spectacle usually takes place in the afternoon no inconvenience in this quarter is caused by the sun's rays. The composure of the *élite* in the boxes, where the bride-like costumes of the ladies give a strange refinement to the scene, indeed the coolness of all in the shady side or *Sombra*, is strongly contrasted by the close packing of the roaring "people" in the *Sol*. On that side the glare and heat are combated by myriads of fans of all colours. These, mixed with bright mantillas and flower-decked heads, make a blaze of tints, the blue sky over

The Opening Parade.

all, not easily equalled. The *Sol* has the life and glow of popularity, the *Sombra* the stamp of fashion, both combining the enthusiasm of the Spanish race.

The equipment for an ordinary *corrida* or bull-fight is six bulls. Two *espadas* or *matadors* are engaged to kill alternately, the elder commencing with No. 1. Each "master" has his own band of assistants called a *cuadrilla*; this troupe consists of four men on foot, known as *banderilleros* or *chulos*, and two horsemen called *picadores*. The sacrifice of horses varies: sometimes only ten suffice, at others twenty or more are required. The cost of an average *corrida* would be approximately one thousand pounds. Each matador is responsible for the performance of his party, The senior takes the management of the ring-details. The word of the chief is law to his followers, who usually have great respect and affection for him. In some cases there are three *espadas* engaged: then two bulls fall to the lot of each.

The total number of spectators varies according to the size of the ring, a fair average being 8,000 seats (that of Madrid contains 12,500).

The assemblage is presided over by persons in authority—in provincial capitals by the civil governor, in smaller towns by the *alcalde* or mayor.

The changes in the spectacle are directed from the presidential chair. When nothing goes wrong, the waving of a white handkerchief suffices for the purpose. A red one is the sign of disapproval.

The fight is divided into three stages, first, the *suerte* or hazard play of the *picadores* or horsemen; secondly, that of the *banderilleros* (men on foot), and lastly, the crowning and principal scene, the *suerte* of the swordsman (*matador* or *espada*). The spectacle commences with a procession of the entire "cast," issuing from the gate opposite to the president's balcony. The *matadors* lead the show, walking in line abreast some three yards apart, behind them in Indian file follow the *cuadrillas*. The *picadores* ride in couples behind. The *espada* of highest fame leads the left wing, and the rear is brought up by two teams each of three mules harnessed abreast in gaudy trappings, accompanied by

grooms and attendants. The *espadas* wear their gala capes in stately fashion. These garments are soon to be exchanged for less expensive ones for use in the conflict.

Preceding this imposing parade two *aguacils*, or warders, in sixteenth-century costume ride across the ring and go through the form of asking the president for the key of the bulls. This is thrown from above. The retirement of the *aguacil* with the key is the prelude to the fight. The vast arena is now clear save for the *picadores*, who are ranged some twelve yards apart on the left of the door from which the bull will emerge. Their horses are so placed that, if charged by the bull in his first rush, the impetus will be received on the right side. Each man grasps tight his *garrocha* or lance. There is a lull in the roar of thousands. The fatal handkerchief is waved, a herald trumpets the command to unswing the double doors, and the noble beast bounds to his fate. Encompassed on all sides by glaring moving colour, maddened by all he sees and hears, the call on his ferocity is not made in vain, and fain would he wreak his vengeance on all at once. His eye takes in several victims, hardly can he decide which he will first attack. He swerves in his career from one to another, then darts at one and charges home. The efforts of the *picador* with his lance seldom serve for aught at this first charge: the guard is broken through, and horse and man are hurled to the ground. Frequently the *picador* is jammed between the saddle and the barrier. Then the *toreadors* come to the rescue by trailing capes before the bull, and his attention is taken from the fallen man, who may be within a few inches of his horns. The coloured *capa* takes his eye, he turns to catch it on his horns, then sees another horse and man, and on these vents his fury, usually with the same result as before. The object of the *picador* should be to turn the charge of the bull by firmly placing the point of his lance between the shoulder-blades as he wheels his horse to the left in safety.

Whatever may be said in answer to those who claim for the second and third sections greater proficiency and skill, the first part (that of the *picadores*) is but a prostitution of the original finished display of horsemanship. It must be borne in mind that the first *espada*, the *matador*, has completely absorbed the interest of the public. He has become the monopolist of *plaza* favour.[1] As two of rival rank are usually performing at the same fight they are the centre of all eyes, and not infrequently daring competitive efforts are made to draw applause. Thus the *picador* is of secondary interest. The object of the *Suerte de Varas* (lance play) is to tire the bull sufficiently (not too much) to render him a more facile plaything in the use of the *banderilla* and the sword (second and third acts).

As the president (assisted by an expert) gives more or less time to this part of the performance (the *picadores* punishing more severely a strong bull than a weaker one)—wounded horses, terribly wounded horses, are brought up again and again to receive the bull's charge. Only animals unable to bear a man are mercifully brained by the grooms of the ring. After each charge the bull is less inclined to continue the work; then the horses are spurred to where he may be standing and he is urged to charge again by a movement of the bridle or by shaking the lance. This is called *citing* the bull. It is notorious that the *picadores* do not try to save their horses—poor refuse and cast-offs as they are. The men have direct interest in riding a number to death. The public no longer require them to save the horse; rather are they applauded for taking the risk of the falls, and these are considerable. The fame of the breeder is augmented by many slain, while the *espada* scores by achieving the death of a bull which has killed many horses. Should the bull be of soft description and refuse to charge a third time (which seldom happens), the red handkerchief is waved. *Banderillas de Fuego* (darts with fireworks attached) are then implanted in the bull's withers. This is a terrible disgrace to the herd from which he comes. The *picadores* are fined if they place the lance in any but the proper spot or injure the bull in an unorthodox way.

All through the *corrida* the cape or *capôte* is ever cheating the bull—the never-failing lure—flaunted, and trailed, fascinating and fixing his attention. By it the expert stops or directs his charge. Of the two things, the man or the cape, the bull will almost invariably go for the cape. This gives many opportunities for the bull-fighter to show off. In it is involved the first principle of bull-fighting. By the *capôte* or long cape the bull is tired and beguiled during the first two episodes. It is by the small red cloak, or *muleta*, that the *matador*, unaided, encompasses his death in the last act. Not infrequently at the *sortie* of the bull, before he has even charged the first horse, a *matador* will face him in the centre of the ring with extended *capôte*. Between outstretched hands he holds the lure well up; when the bull with furious rush appears almost to have caught him, he swings his arms to one side; with unmoved feet and a sway of the body, the folds of the cape are thrown open on the right, the bull bends his head and follows the trail of colour. He stops his charge and turns to seek the phantom anew. Again the cape is stretched—another rush—again the bull is baulked as the slippery

[1] As their importance has increased, so has their emolument. A hundred years ago each bull was paid for at the rate of about a sovereign—fifty years ago (in the time of the great Cnchares) at £10. To-day Guerrita or Mazzantini will look askance at anything less than £50 to kill a bull.

silk goes slithering across his horns. This *coup* is called *La Veronica*. The movement called *Navarra* is of similar risk.

Another trick called *de Tijerilla* is of still greater danger. In this exhibition the *matador* has the cape crossed over his breast and held beneath the arms. He has to await the charge and yet free himself and divert the bull's attack. The leap of the lance (*Salto de la Garrocha*) is performed by the expert awaiting the bull in mid-ring with one of the lances used by the *picadores*—as the bull lowers his head in the charge he leaps over him. Another risky performance, seldom seen, is to place the foot between the horns and spring over the bull as he charges (*Salto del testus*). In order that the horses may not shrink from the onslaught, their right eyes are invariably blindfolded. When the president considers the bull has been sufficiently "brought down," the bray of the trumpet heralds the next act, the horsemen retire from the ring, and for a few seconds the bull and the slain are in possession. The *banderilleros*, each with a pair of darts, now advance. The *banderilla* consists of a wooden shaft an inch in diameter and $2\frac{1}{4}$ feet (or less) in length, covered with bright paper frilling, having at the end a short sharp iron barb. By waving these at arm's length aloft, the *banderillero* cites the bull to charge. As the bull lowers his head to gore his tormentor, the darts (one from each hand) are deftly implanted between the shoulder-blades, as nearly touching one another as possible, the man reaching over the horns in the act. At the same moment, by a graceful movement of the body he avoids the beast's thrust. This is doing the "turn" well, and indeed a quick and careful calculation of distance is necessary; so much so, that a start with the wrong foot might easily be fatal. The different modes of "putting in the darts" may be divided in two forms. First—awaiting the bull face to face, and second—coming up from behind, when the bull receives them in the act of turning to charge, and before he actually has time to do so. Each form embraces a variety of *coups*, though, it is needless to say, the best is the face to face system. To go into these and other details would require a volume. With the smart of the first pair of *banderillas* the bull roars with fury, and bounds hither and thither, frantically trying to rid himself of the unwonted encumbrances, the shafts of the *banderillas* falling and rattling on his horns to and fro, but firmly attached by the barb, which only pierces skin deep. While in this state he presents a more favourable mark for the second *banderillero*, who fixes with greater ease a second pair; this is called putting in a pair *al relance* (on the rebound). The darts are usually fixed by the *chulos*, but on some occasions the public demand that the *matadors* themselves should do this. By an almost universal custom, the *matadors* affix the darts in the fifth bull. This is always the pick of the six, and hence comes the Spanish proverb "No hay quinto malo," the fifth is ever good. Should only one dart remain sticking, or the pair be badly placed, the public express their disapproval by loud whistling (as in all cases of bungling or cowardice). Four pairs of *banderillas* sometimes decorate a bull before the *séance* changes. Should the beast advance at a trot, he affords no chance, and the *banderillero* must escape to the barrier and wait a better opportunity. Herein lies a fruitful cause of accidents, as he has then no *capôte* for defence, and must trust to speed or his comrades' *capas* to draw off the bull.

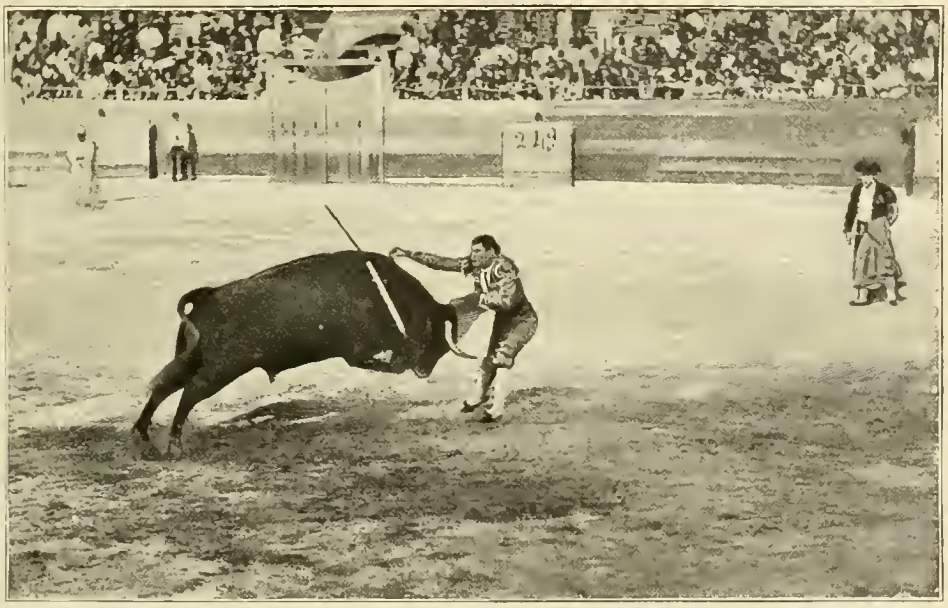
REVERTÉ, THE RISING STAR.

A feat introduced by El Gordito, and since emulated by a few others is the "hazard of the chair" (*Suerte de la Silla*). The *banderillero* takes a cane-bottomed chair to the centre of the ring, and, seating himself, awaits the charge. On this taking place he swiftly "plants" the darts and glides to one side, the bull meanwhile

tossing the chair on high ; this looks very effective. But to resume ; the trumpets sound once more for the third and great scene, and an expectant hush falls on the vast gathering as the *matador* steps alone into the arena, and approaching with stately stride beneath the presidential stand, makes an impromptu speech, of which the following may be quoted as an example :—

> Your Grace, to you, this bull I pledge
> To slay, and stake my life,
> Whereof in token, here's my badge
> Ere ent'ring on the strife.

Then, turning sharply on his heel, he casts his *montera* or betasselled cap behind him defiantly, sworn to do or die. Slowly he advances to the bull, grasping in his left hand the *muleta* or small red cloak, a hole in the centre of which admits one end of a short stick for the better extension of the cloth ; and in his right the long, rapier-like sword. As he steps out, his wiry and athletic form is well shown up by the bright silken attire of faultless fit, gleaming with gold or silver embroidery and precious stones. At a distance stand his satellites, their *capôtes* ready in case of need. By the *muleta* the bull is induced, with his eye constant to the lure, to charge again and again, the *matador* "passing" him now on one side now on the other, till the panting animal stops in wonder. Raising and depressing the *muleta*, the man observes whether the beast is still obedient to its influence. All this time he has been studying the bull's peculiarities, for on this much of his success depends. When the bull assumes a suitable angle and position the *matador* raises his sword shoulder high, takes a steady aim and makes his running lunge (that is, in the case of the *Volapié*—see later). If successful and rightly placed, the bull falls dead, the sword left in to the hilt. The spot aimed at (just in front of the withers) is only a few inches in size. A small deviation is sufficient for failure, and the bull may require several thrusts ; to kill the beast with one counts the highest merit, that is, if properly administered, though thrusts are reckoned good, even if the bull is not killed, provided they are well placed, as the bone often obstructs the sword. The following are the lunges or thrusts of the *matador* :—



Up to the Hilt—a perfect 'Suerte de Volapié.'

GOOD.

Recibiendo or *Aguantando*—Receiving the bull's charge, *matador* motionless, only swaying body to avoid horns.

A un tiempo—Both bull and *matador* meet midway.

Volapié or *Vuelapies*—The usual method—the bull steady, *matador* kills with running thrust.

INFERIOR.

Á paso de banderillas, Al revuelo de un capôte, Al relance, Á la media vuelta—When the bull is taken in motion on half turn (four variations).

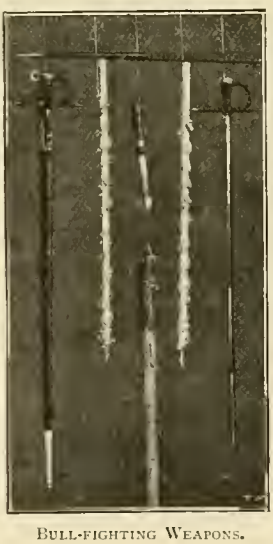
BAD.

Mete y Saca or *Metisaca*—A defective stroke used only with cowardly bulls as a last resource—to kill without regard to rules, care being taken to remove the sword to avoid bad impression.

The *matadors* are recruited from the *banderilleros*, but the *picadors* always remain *picadors*. An interesting ceremony is sometimes to be witnessed in a large ring, when a first-class *matador* elevates a junior colleague to the highest grade. To do this, instead of killing the first bull, his by right of seniority, he formally hands *muleta* and sword to the aspirant, who, having achieved the feat, is ever afterwards of premier rank. This is called "taking the alternative."

The prominent *matadors* of recent years are the following: Bocanegra, El Gordito, Chicorro, Lagartijo, Frascuelo, Angel Pastor, Mazzantini, Espartero, Guerrita, Reverté, Bombita, Lesaca, El Algabeño. Each of these was or is the exponent of a particular school. (In *Wild Spain*, by Abel Chapman and myself, readers will find some account of the Bull Fight as it was in the old days and of the earliest professionals in the art.)

In Portugal a popular spectacle prevails—a so-called Bull Fight, which however partakes more of the nature of a circus entertainment, and is consequently held by Spaniards in very ow esteem. In these shows a variety of feats are gone through; the *banderillas* are "put in"



BULL-FIGHTING WEAPONS.

Sword. Point of a lance.
Banderillas. Wand of a *muleta*.
Braining dagger.

as in Spain, but some of the other tricks are of the clown order: one skilful performance deserves praise—a humane adoption of the Spanish *picador's* rôle accomplished by skilful riders mounted on well-trained horses, which indeed is well worth seeing. Finally, when the bull has given sufficient amusement the *cabrestos* are driven in and the beast makes its exit with them. The Portuguese Bull Fight, though presented in a Spanish setting, differs almost entirely in its execution, as the risk to man or beast is small, owing to the round wooden knob which covers the point of either horn.

WALTER J. BUCK.

VOCABULARY OF WORDS REFERRING TO BULL FIGHTING.

Aficionado—An enthusiast, a devotee.
Aguacil—A mounted official, a messenger.
Anillo (or *Redondel*)—The arena.
Arrastre—Dragging by mules the slain animals from the arena.
Banderillero—Expert who places darts or *banderillas* in the bull.
Barrera—Wooden partition encircling arena.
Becerro—A bull calf.
Burladero—Screen for safety or refuge in arena.
Cabrestos (or *Cabestros*)—Tame cattle used in removing bulls.
Capa (or *capôte*)—Cloak, cape, mantle.
Capeador—An expert with the *capa* or cloak.
Castigo—Punishment inflicted by the lance.
Chiquero—Cell or cage for the bulls.
Chulo—An assistant bull fighter.
Cojido—Caught, overcome.
Coleta—Plait of back hair worn by *toreros*.
Cornada—Thrust or wound of a bull's horn.
Corrida—A bull fight.
Cuadrilla—Troupe or following of a *matador*.
Descabello—Act of braining the bull with a sword, sometimes permitted.
Desecho—Inferior, discarded.
Diestro—An expert, a professional.
Divisa—Rosette sometimes placed on the bull.
Embolado—Bulls' horns thus described when points are covered.
Encierro—Enclosing bulls in the ring (*toril*).
Engaño—Lure, deception. Applied to bull fighter's cape.
Entrada—Fee for entering the bull-ring.
Entre-barreras—Between the two barriers round arena.
Ganaderia—A herd, or breed.
Garrocha—Heavy wooden lance with short iron tip.
Gitano—A gipsy.
Humillar—Lowering of the bull's head to toss.
Jurisdicción—When the bull is within striking distance of the expert he is said to be *à jurisdicción*.
Lid (*Lidia*, or *brega*)—Action or turmoil of the bull fight.
Matador (*espada*, *toreador*)—The chief bull fighter, he who kills the bull.
Moña—Round padded ball worn at the back of the head by the men during the fight.
Monos sabios—Boys and men employed in the service of the bull fight.
Montera—Cap or headgear worn by all except the horsemen (*picadors*).
Muleta—Small cape without collar used by *matador* on killing the bull.
Novillada—An inferior bull fight, in which the animals are young or defective.
Novillo—A young bull.
Pase—Action of passing the bull from one side to another by using the *muleta*, or small cape.
Paseo—Parade of the bull fighters.
Picador—Horseman armed with lance.
Pinchazo—Half completed sword-thrust.
Pinta—Colour or marking.
Plaza—The bull-ring building.

Puntillero—He who ends the bull (if necessary, after the *matador* has given a mortal wound), by using a braining dagger.
Quiebro—Movement, twist of the body.
Quite—Act of enticing bull from fallen man with cape.
Rejon—A kind of dart or spear.
Res—An animal, applied to a bull.
Sol—Sunny or cheap side of ring.
Sombra—Shady side of ring.
Suerte—Fashion, mode, form, hazard, attack.
Tablas—First wooden barrier round the arena.
Torero—A bull fighter.
Toril—Yard enclosing bulls on their arrival at the ring.
Toro bravo—A fighting bull.
Trastos—*Matador's* tools (sword and small cape).
Vaca—A cow.
Vaquero—A herdsman.
Viaje—A movement or course taken by bull in the ring.

BURREL—The Burrel, Burrell, Burhel, Bharal, or Blue wild sheep. *Ovis nayæur*, Hodgson, *Asiatic Rev. XVIII.*, pt. ii., p. 135, (1833); *Ovis nahoor*, Hodgson, *P.Z.S.* 1833; Sclater, *P.Z.S.* 1860; *Ovis nahura*, Blyth, *Cat.*, p. 178; Jordan, *Mam.*, p. 296; *Ovis burhel*, Bluth, *P.Z.S.* 1840, p. 67.

Native Names—*Na*, *Sua*; Ladak. *Wa*, *War*: Sutlej valley. *Nirvati*; Nepaul. *Nao*, *Gnau*; Bhotan.

Measurements—Height of full-grown male 30 to 36 inches, being considerably shorter than Ovis ammon and of a stouter and less graceful build.

Horns, &c.—Average length, 22 to 24 inches; girth at base, 11 inches. Hodgson records a pair of 32 inches: *P.Z.S.* 1840, p. 66. The horns are moderately smooth, with a few wrinkles, and are of a peculiar shape. They are set on the head close together and spring at first outwards in a rounded arch from the head; the points then curl backwards, outwards, and upwards in a manner unlike any other head unless it be that of the Caucasian burrel or the Pyrenean Ibex. The head is somewhat coarse and distinctly sheep-like. No mane or ruff. Ears short. No sub-orbital glands or lachrymal fossæ; but feet pits are present in all four feet.

Colour—Brownish grey in summer: slate-grey in winter. The lower parts, inside of limbs, and buttocks, white. The male has black face and chest; a black stripe down the front of the limbs and along the side of the body. The female is much smaller and insignificant in colour, with rudimentary horns.

Distribution and Habitat The Burrel from a sporting point of view is an example of the blessings of mediocrity. He has an enormous range. He inhabits practically the whole of the higher portion of the main Himalayan range, from Shigar in Baltistan to Sikkim and Bhatan; together with an indefinite range of country to the North as far as the Yarkund country, the Kuenlan and the Altyn Tagh (Prejwalski). Much of this country is open to the sportsman; the Burrel is not a very difficult animal to find if patience be exercised; nor is he, as a rule, on ground which presents very great difficulties to an experienced stalker. On the other hand his head, though handsome, is not

BURREL.
Ht. at shoulder, 36 in. Av. horn meas. 22 in. Max. horn meas. 32 in.

a very striking trophy, and as he usually dwells within ken of Ovis ammon or Ibex, the average sportsman does not devote the whole of his time and energies to stalking Burrel, but generally hopes to obtain a head or two on his way to or from the home of superior game. At the same time Burrel show very pretty sport. They live upon the highest ground, being seldom found in summer lower than 10,000 feet. Much of the best ground is above 17,000 feet. The pursuit of Burrel therefore requires sound heart and lungs besides mere leg power. At times, owing to the colour of the base rock on which they are lying, and to the indescribable "mirage" of a Ladak summer's day, they are very difficult to spy. Old-time sportsmen have described them as being not easily alarmed. Wilson and Kinloch both relate instances of most confiding behaviour on the part of Burrel in remote districts. Nowadays, it is safe to say that the Burrel, like all wild sheep, has remarkably acute senses of sight and smell and takes the fullest advantage of both, as well as of its powers of speed and endurance, in order to secure its own safety.

Shooting—Like other wild sheep, too, it is very tough to kill and requires to be hit in the right place. A good Balti dog may be a useful addition to the party. Ward in his excellent *Guide to Kashmir and Ladak* mentions a case in which a Balti dog cornered a wounded Burrel under a rock and lay out all night watching it till the sportsman returned with the daylight to put in a finishing shot. This happened in 1881, and a few years later the story was confirmed to the present writer by the owner of the dog.

In some aspects the Burrel is allied to the goats as well as to the sheep. Hodgson at one

time classed him as a *Pseudovis*. His horns have a peculiar twist which suggests the goat, and have a strong resemblance to the Caucasian Burrel (*Capra pallasi*), and also to the Pyrenean Ibex.

On the other hand he has no beard and no caprine smell. Indeed, one of the best points about the Burrel is his mutton, which is excellent. Unless it be his congener, the Big-horn of the Rocky Mountains, few animals can supply a better joint than the saddle of a fat Burrel ram, not too young, killed in September or October.

S. H. WHITHEAD.

BUSH PIG (*Potamochœrus africanus*)—The *Bosch Vark* of the Boers, sometimes called the **Southern River Hog**, is found in various regions of Africa, usually in the neighbourhood

BUSH PIG.
Ht. at shoulder, 28 *in.* *Length*, 60 *in.*

of thick bush and forest. It seldom wanders far from water, and is, therefore, not known in many parts of the dry interior of South Africa. In the bushy parts of the eastern provinces of Cape Colony, and in Natal, Zululand, and the jungly regions of South-eastern Africa, it is not uncommon. It is found sparingly in Matabeleland and Mashonaland. In height, the bush pig stands about 2 feet 4 inches or 5 inches. Its extreme length, from snout to tail-tip, is rather more than 5 feet. The general colour is reddish-brown, mingled with grey. The body carries a great deal of coarse hair, especially upon the back and neck. The ears are long and strongly tufted with bristles. The tail, which is about a foot in length, is also strongly tufted. The tushes resemble those of the wild boar of Europe. The canine teeth are all strong and pronounced. Upon the chaffron is a remarkable bony excrescence. The bush pig is, from its extremely shy habits and the difficult nature of the jungles in which it secludes itself, not often bagged by the white sportsman. It is however, occasionally shot in the periodical drives for small antelope organised in the bush-veldt country of South and South-East Africa. The flesh is fairly good. The **Red River Hog** of West Africa is a near ally, and strongly resembles this wild boar in appearance and habits.

H. A. BRYDEN.

BUSTARD — Thirty species of Bustard, separated into twelve genera or imaginary groups, have been described; we are content to omit these perplexing names and refer them all to the typical genus *Otis*. (The numerals given below after the specific names represent the average length in inches of the males, and serve to show the proportionate size of each species.) In most the males are much larger than the females, but this is reversed in the **Floricans**, the females being the larger. Of the thirty different Bustards, two, the **Great Bustard**, *O. tarda*, 42, and the **Little Bustard**, *O. tetrax*, 17, are resident in Europe, Central Asia, Persia, and North Africa.

Five are Asiatic, and four of these, *O. edwardsi*, 50, the **Bengal Florican**, *O. bengalensis*, 25, the **Lesser Florican**, *O. aurita*, 19, and the **Eastern Ruffed Bustard** or **Houbara**, *O. macqueeni*, 28, are resident in India; the last-named, occasionally wandering to Europe, has been obtained in England. One Bustard, *O. australis*, 48, very similar to the Indian *O. edwardsi*, is peculiar to Australia, and known to Colonials as the **Wild Turkey**.

Twenty-two species are resident in Africa, one of which, the **Western Ruffed Bustard** or **Houbara**, *O. undulata*, 28, occasionally wanders to S. Europe, and is found in the Canary Islands; twelve of the others are S. African, including the largest, the **Gorri-Paaver** of Colonists, *O. kori*, 50, and the **Koorhaan**, *O. afra*, 19.

Bustards are unknown in the American regions. The **Great Bustard** was formerly resident in England, the last of the British race being killed in Norfolk in 1838. Since then occasional visitors appear, generally in winter. Always frequenting open country, this fine bird is found in great numbers on the vast plains of Andalusia, where sometimes flocks of as many as seventy may be seen. The best, but not, perhaps, the most sporting, way of shooting them is by driving, usually in spring. It is difficult in some parts to find any shelter for the guns. Where there are dry watercourses it is, of course, easy work, and in May the wheat is high enough to squat behind, while in some spots it is necessary to make screens of dead thistles and other rubbish. On suitable ground, the gunner can lie flat near the top of the

reverse side of any slight hill over which the birds are to be driven. The chief object is to keep perfectly immovable, for no bird has a keener sight than the Great Bustard, and the faintest movement will send it swerving.

It is usual only to shoot the males; the old ones, sometimes weighing up to 36 lb., are called by the Spaniards, "*Barbones*," from the tuft of long bristly white feathers which grow like whiskers on each side of the throat.

These Bustards usually fly very low, within twenty yards of the ground; but, with the wind behind them, much higher. Considering their size they are easily brought down: No. 4 is quite large enough shot to use, but, wonderful to relate, I have seen good shots clean miss them within twenty yards, perhaps because, from their apparently laborious flight, they seem to fly more slowly than is really the case.

When they do not fall to the shot they always, if mortally wounded, void their excrement.

The drivers need not be numerous. The best driver I knew, one "Perico," or Pedro Molina, of Algaba, a village on the Guadalquivir, a few miles above Seville, never used more than two men to assist him as flankers in driving, but his knowledge of the country and consequent judgment of the course the birds would probably take were wonderful. The late Lord Lilford (*Birds of Northamptonshire*, vol. i., pp. 342–4) gives a graphic account of Perico, under whose guidance both himself and the writer shot their first Bustard many years ago. Bustards are also shot in the hot months by the Spaniards at drinking places; but they kill most at night in the way adopted for many small ground-roosting birds, viz., with a lantern and bell. With the Bustards, however, a horse and gun are also used, the gunner walking by the side of his horse, while his confederate rings the bell and shows the light, till it shines on the birds, which are then killed, some times three or four at a shot.

BUSTARD.

Another tedious method, a stratagem practised in almost all countries with Bustards and many other birds, is to approach them with a cart. The most sporting way is stalking them with a rifle, when, if the ground be unfavourable, a shot may occasionally be got by gradually circling round them.

The **Little Bustard**, a straggler to the British Islands in autumn and winter, is also found in Andalusia and Morocco in great numbers, but is a shy and very difficult bird to circumvent. Though usually frequenting more undulating ground than the Great Bustard, I have always found it useless to attempt to drive them, as when flushed they rise at once, sometimes to such a height that unless seen to rise from the ground it would be hard to recognise them. They are also very difficult to detect on the ground, though, when flying, the white of the wings is very conspicuous.

The only season in which they can be easily shot is during the great heat of August, when, at midday, they lie well; but the heat is then too much for ordinary mortals.

Occasionally, without any apparent cause, they will, like Golden Plover, fly past within easy reach, and, keeping very close together, offer a good "browning" shot.

Even when nesting amongst the well-grown corn, they are very wary; and I have found it troublesome to obtain specimens.

When rising from the ground they make a loud rattling noise with their wings, whence the Spanish name of "*Sison*" and the Moorish "*Bou-zerat*," "father of the armourer"; another Moorish name is *Sirt-sirt*, from their peculiar call in the breeding season. Their flesh, unlike that of the Great Bustard, is excellent, almost equal to that of the Bengal Florican, and in Spanish hotels figures on the menu as "*faisan*."

The larger Bustards, which frequent open ground, are wary and difficult to approach,

needing all sorts of stratagems to obtain a shot; but some of the smaller kinds, like the Bengal Florican, which are found in thick grass, lie close and are easy to shoot.

L. H. IRBY.

BUSTARD SHOOTING IN ANDALUSIA.—The Great Bustard, banished from Wiltshire Down and Norfolk "Breck," must nowadays be sought in wilder lands beyond the sea, in Danubian province or in the rolling corn lands of Southern Spain.

In Spain the Bustard is not regarded as game, and in autumn and winter is seldom molested. In June, however, a considerable number are shot over pointers in the corn, mostly females and young birds. The peasants also form ambuscades near the wells where the cattle are watered, and whither the Bustard come daily at dawn to drink. Another plan during the great summer heat is to shoot the birds from a bullock-cart, covered with esparto-matting, which is pierced with loopholes. The hunters gradually circle round till within range and fire a volley. These methods all, however, smack of the pot-hunter, and as such do not commend themselves to Englishmen. The real pleasure of Bustard shooting centres in a day's driving in winter. For this, every one must be mounted, as thousands of acres will be traversed during the day; besides, it allows of a far nearer approach to the birds themselves. On spying a flock the object is to "horseshoe" the guns as near as possible to the birds without being seen, advantage being taken of any suitable cover to hide oneself, though the spot is often a bare hill side, with nothing but the slope to conceal one till the birds are within shot. On these occasions it is absolutely necessary to remain quite motionless, as on the smallest movement the keen-sighted birds swerve off. When the guns are placed, three beaters ride round, one to put up the birds, and the other two, by galloping with them, to prevent their breaking out, a frequent occurrence in spite of all precautions.

Should it be necessary to place the guns in full view, the following tactics are useful: the whole party ride round the birds in a wide circle, and as each man in turn reaches his appointed place, he slips off his horse, and, handing the reins to the man in front, flattens instantly on the ground. The man who places the guns should have a thorough knowledge of the lie of the land. In shooting it is necessary to aim much farther ahead than the apparently slow flight seems to warrant, as a Bustard, though falling easily to a single AAA pellet if hit forward, even at long range, will otherwise carry away a lot of shot; indeed, quite as much "allowance" is necessary as at a rocketing pheasant. Clothes harmonising in colour with the surroundings are also indispensable, for so much depends on utilising every possible means of concealment in view of the absence of cover. As specimens, Bustard should be shot in May and June. The females are small, 10 to 12 lbs., and are seldom seen, but the cock birds, "packed" at this season, and with their beautiful neck-ruffs, often weigh 30 lbs. The largest I know was obtained by Mr. Abel Chapman in 1893 and weighed 37 lbs. Three to five guns are the most suitable number, and, with luck, should average a brace each. For a single gun, a brace is a good day's result, though the present writer on one occasion got four brace.

BERTRAM F. BUCK.

BUSTARDS, AFRICAN.—Bustards are to be found in many parts of the African continent, but, up to the present, the various species have only been determined with anything like exactness in the countries between the Cape and the Zambesi. Even here, it is probable that one or two new species may yet be established. In South Africa, where at least ten species are at present known, very excellent sport is to be enjoyed with the many bustards to be found almost everywhere throughout the country. The Paauw, or Kori Bustard (*Otis kori*), is the largest bustard in the world, and attains occasionally a weight of 40 lbs. These noble game-birds are usually secured with the rifle. The Stanley Bustard (*O. caffra*), and Ludwig's Bustard (*O. ludwigi*), rank next in size to the Paauw. Following these, come the smaller Bustards, usually known to the colonists as "Koorhaans," many of which are extremely plentiful all over the country—especially upon the open plains—and afford capital sport for the shot gun. The Black Koorhaan (*O. afra*), Black and White Koorhaan (*O. afroides*), Vaal (grey) Koorhaan (*O. scolopacea*), the Bush Koorhaan (*O. ruficrista*), the beautiful Blue Koorhaan (*O. cærulescens*), the Senegal Bustard (*O. senegalensis*), Rüppel's Bustard (*O. ruppeli*), and the Black-bellied Koorhaan (*O. melanogaster*), are all handsome and extremely interesting birds known to the South African sportsman. The great Kori Bustard (Paauw) is a magnificent table bird, and most of the others afford excellent eating as well as good sport. The gunner may identify these birds by reference to Layard and Sharpe's *Birds of South Africa*.

H. A. BRYDEN.

BUTTERFLY AND MOTH COLLECTING.—That butterfly and moth hunting is a sport, no one will deny who has ever chased a strong flying fritillary over rough country, or tried to snare over the treacle a restive rarity that refuses to become intoxicated. We therefore give a few practical hints for its successful pursuit.

Capture, Apparatus, &c.—To obtain the perfect insect in its wild state is the finest side of the sport, and the demand is not so much

for elaborate apparatus as for activity and energy on the part of the pursuer. For the apparatus, a folding net, of the largest size possible, the ring fitting in a Y socket, is advised, and a broken golf-club makes an admirable stick. For killing purposes one may use a bottle or tin, the latter having the advantage that, if the lid is hinged, one hand can do the work of slipping in the insect. The poison may be *potassium cyanide* contained in a solid basis of plaster of Paris, or chloroform dropped on cotton-wool. Chloroform tends to stiffen the insects, but is quicker in action. The great objection is that one may at any moment find the stock exhausted, and the bottle empty, when far from all chance of obtaining the drug. In any case let the bottle or tin be filled with *very loosely* packed cotton-wool, to prevent insects rubbing on one another. When in pursuit, mark the point of settling, and come up against the sun, so that no shadow may fall and startle the quarry. Almost all butterflies rise *perpendicularly*: therefore get the net well above them.

Localities—For *butterflies*, the best possible place is a rough open common near a wood, and if possible, surrounded by woods. These should be worked thoroughly, as should the ridings of the woods themselves. For those who can spare the time, a week or more in the **New Forest** is bound to yield much sport in all the entomological branches. Clover fields should be watched and the hedges around them carefully beaten, for many moths lie there during the daytime. Disused quarries and railway cuttings are also found attractive.

The *Hawk Moths* are generally bred, but they may be caught with net and light about two hours after dusk, as they come to feed on such flowering shrubs as rhododendron, ivy, &c. A sharp look-out should be kept, during the months in which they come from their pupæ, upon fences, tree-trunks, &c., near their favourite food-plant. In the daytime, once seen, they are secured without difficulty. *Geometers* may be obtained in the daytime by beating hedges and skirts of woods, or by walking over rough ground. It is advisable to try to catch them on the wing as they rise, for, when they get to cover, they are extremely hard to find. They start of their own accord to fly by hedgerows, in gardens, and in the ridings of woods just after sunset, when for an hour and a half the net may be used with success. The usual method for the capture of *Noctuæ* is *Treacling*.

Time—Moths may be captured all through the year, some few appearing only in the winter, but the season for butterflies rarely lasts for longer than from the middle or end of April to the end or middle of September. The best time of day is from about nine till eleven, and from one till three. At midsummer, a hunt before breakfast is sometimes well rewarded by a large capture of some of the rarer flies.

Treacling—It is quite unnecessary to go in for elaborate boilings of treacle, sugar, beer, &c. The simplest recipe is by far the most effective. Take a pound of the best treacle, *not* "foots"; put in a few drops of jargonel, enough to make the scent perceptible at a distance of several yards, a tablespoonful of rum, and mix thoroughly. As dusk falls, put the treacle on rough-barked trees with clear bottoms (so that fallen insects can be seen at once) and always to leeward. The same trees should be used again and again, to prevent the treacle from sinking in too fast. One cannot do better than settle upon a circuit about a mile in length, with some twenty-five selected trees roughly at equal distances. The night must be warm, and, if possible, dark. Two work treacle much better than one, for it is advisable that one should hold the lamp, whilst the other taps the insect into tin or bottle. A *sugaring net*, which can be pressed against the tree and held beneath the treacle, is very useful. It is not often of much use to remain out watching the treacle more than two hours; the attractiveness has usually disappeared after that time.

Breeding provides the finest specimens and gives most scope for experimental work. Larva-cages can be bought, but are easily made, the essential point being to keep them clean. For fairly common larvæ, the escape of some of which is not important, there is nothing better than a grocer's orange box three-quarters filled with mould and carefully planted beforehand with suitable food-stuff. The top may be covered with mill-silk or perforated zinc.

Pupa Digging may be carried on throughout winter and spring, but it is not wise to expect very abundant results. The best spots are around the trunks of big trees which stand at the edges of a wood.

Setting—First, and most important from the start, are **entomological** pins (*No.* 9 is a very handy size for most purposes). A badly-set insect may be relaxed afterwards, but a bad pin remains an eyesore, and its removal is a very delicate operation. It may happen that in the first year of collecting the best variety or the greatest rarity in the collection falls to the net, and is eternally disfigured. The needles used for extending the wings should be fine, but strong, and they will be found very handy if the head be thrust well up into the centre of a stout wooden match.

Of **Setting** there are many methods, the commonest being with strips of thin transparent paper passed over the wings and pinned down beyond them. Another, which can be strongly recommended, is to use only short setting boards, with room for one, or at most two insects. Instead of straps, soft, and fairly fine wool is passed lightly over the wings. One turn should first be taken over the wings close to the body, so as to bring them flat upon the

setting boards for the needles to adjust them. Then wind round the board as many turns of the wool as seem necessary to keep the wings absolutely steady. It should be mentioned that this plan is not found to work so well with the micros, for whose setting microscopic slides are sometimes used with success. The chief cause of bad setting is the taking of the insects from the boards before they are *absolutely dry*. Five weeks is by no means too long to leave them. A relaxing-box can easily be made by affixing sheets of cork to the bottom of any air-tight box. If these be damped and the insect pinned to them, it will be ready for re-setting in two days.

For **Identification**, two books that can be strongly recommended are W. S. Coleman's *British Butterflies* and E. Newman's *British Moths*. Other valuable works are mentioned in the Bibliography.

Preservation and Exhibition—Albocarbon, or its refined form, naphthaline, will preserve insects from mites, and should be kept in every drawer or box in which they are. Light must be jealously excluded.

When a collection is begun a careful note should be made of the species likely to be found, and the available space accurately measured. A "Watkins and Doncaster" label list should be purchased and a proportionate space left with a label for each probable insect in case of capture. It is advisable to leave a considerable interval between each group, in order that an unexpected success may not involve the re-arrangement of the whole.

A good cabinet is almost the only part of his equipment for which the collector is necessarily dependent on others, but it is great unwisdom to attempt the saving of a few shillings in this department. The usual price for the best quality is 15*s.* each drawer, measuring 16½ by 19½ inches, and they can be obtained from any entomological firm.

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C. S. COLMAN.

CAMPING OUT—AFRICA, SOUTH—To ensure the success and enjoyability of a sporting trip it is essential that the "creature comforts," as regards both food and lodging, should be carefully attended to; and a few words on the subject may be useful to those who have not had experience of the somewhat difficult task of remembering beforehand and providing every requisite for an expedition into uninhabited country far away from shops or stores.

Wagon Outfit—If it is not proposed to enter the Tse Tse fly country, the best and most comfortable mode of locomotion in South Africa is by Cape wagon. A good full tent wagon costs from £80 to £100, and in this there is ample room for two comfortable *kartel* beds, and the stores, rifles and ammunition requisite for two hunters. Such a wagon requires twelve trek oxen or fourteen donkeys. The writer prefers the latter; donkeys being more tractable and very much hardier than oxen. Trek oxen cost about £9 each: donkeys about £5. A few extra oxen or donkeys should be provided to be used when any of those in the regular teams are sick.

Although the cost of each wagon and team entails a serious outlay (£200 at least). it is cheaper in the end to buy outright than to hire, for if the wagon is a good one and stands the test of, say, six months' work, the price originally paid ought to be obtained for it at the end of the trip.

It is best to regard the price paid for the *teams* as money sunk, for the chances are that, through sickness and accident, very few of the animals will be worth much when the journey is over. The best wagons are those made in Durban and Grahamstown. Second-hand ones are generally obtainable in Mafeking and Johannesburg, the former of which towns is the most convenient starting-point for the Kalahari and Chobè countries; the latter for a point of departure for the bush veldt of the North-east Transvaal. A piece of canvas, ten feet by fifteen feet, will be found most useful to form a shelter from the sun: either thrown over the roofs of two wagons drawn up abreast, and five or six feet apart, or rigged as a lean-to tent against the side of one wagon.

Each wagon requires one driver at about £3 per month, and one "forelouper," or leader, at about £1 per month, in addition to rations. Cape boys and half-breeds make the best drivers.

A boy is required to look after the horses of each member of the party, and to each wagon there should be attached a couple of boys to do odd jobs, such as collecting wood and bringing water to the camp. A cook is, of course, indispensable.

When the game country is reached any quantity of natives can be engaged at 10*s.* a month and as much meat as they can eat (that is

what they really come for), to find and track game.

Each member of the party should be provided with two horses, which can be obtained at from £20 to £25 apiece.

"Salted" horses (*i.e.*, horses which have taken and recovered from horse-sickness) cost from £60 to £100.

A couple of pointers should be taken for partridge and koorhaan shooting, and a pack of mongrels (the more numerous the better) for lions, leopards, &c. These mongrels can be bought at the Johannesburg dog pound at a few shillings each.

Carriers—The following remarks on provisions and camp furniture in the Tse Tse fly country apply equally to the outfit for a wagon expedition.

If the scene of the hunting trip lies within the fly belt, or in British or German East Africa, wagons, oxen, horses and dogs must be dispensed with. The party have to travel on foot, all stores, tents, &c., being carried by native carriers. If a large number of these is required some difficulty and trouble will be experienced in obtaining them.

Zanzibari or Inhambane boys are the best carriers, the latter for choice. It is advisable to write out beforehand and get some one to engage the required number of carriers and ship them to the port from which it is proposed to start.

The recognised weight of a man's load is 60 lbs., but they will carry 70 lbs. or more.

From 20s. to 25s. per month and two pounds of rice per day is the wage of a Coast Kaffir carrier.

Camp Furniture—In any case, whether the start be made from Johannesberg, Mafeking, or Kimberley by wagon, or from Beira, Chindè, Mombasa or Lamoo with native carriers, it is best and cheapest to bring out from England *everything* necessary for the comfort and support of the European members of the expedition. The best tents (these are not required on a wagon trip) are the Weissman tents. One of these, seven feet six inches by six feet, made of stout Willesden canvas with double roof and canvas floor-cloth, costs £9, weighs 100 lbs., and affords comfortable accommodation for two Europeans. Messrs. Edgington provide comfortable camp-bedsteads fitted with hair mattresses and mosquito curtains, which pack into a very small compass in waterproof covers, at a cost of £3 10s.

A strong folding-table should be taken, and, *most important*, each member of the party should have a folding deck-chair with detachable canvas seat.

It is when the long day's march or hunt is over, and the party sit around the camp fire, that the man with the best chair experiences the greatest amount of comfort. For him who has neglected to provide himself with this hunter's luxury, there are only the alternatives of going to bed away from the jovial chat around the fire, or of laying his aching bones upon the ground, with a very good chance of a sting from one of the numerous scorpions who have had notice to quit from the burning logs.

Stores—The writer strongly recommends the Army and Navy Stores as a place where everything may be obtained.

Write out a list of what is required and ask the manager of the Export Department to appoint a clerk to go through it with you. Have the stores packed in half-inch deal boxes with lock, iron hinges, and rope handle at each end, each to weigh 60 to 70 lbs. when filled. Each box should be numbered in large figures, and packed with a small amount of the several articles required for daily use, so as to necessitate the opening of as few boxes as possible each day. A list should be carried showing the contents of each box. By this means any article required can be found immediately.

No vegetables being obtainable in the wilds it is essential to take plenty of desiccated vegetables, dried fruits, figs and raisins. Lard for cooking is most important, the game in some districts being devoid of fat. Danish butter in tins (the smaller the better) keeps well, and is a great luxury. Cheese should be encased in bladders in order to keep well. Bacon should be packed in salt. Tea, coffee, Swiss milk (unsweetened), in tins; jams, golden syrup, soap, spices, salt, candles and lime-juice should be included, and a bag of oatmeal and another of lentil beans will be found useful. Macaroni, arrowroot and essence of beef should be taken as food for fever patients.

Flour should be packed in 14 lb. tins, and care should be taken that the supply of baking powder is ample.

Saccharine should be taken in preference to sugar.

The best and safest mode of carrying whisky or other spirits is in stoneware jars encased in wickerwork, with a metal cover over the bung which locks with a padlock.

In addition to plates, cups, knives, forks, saucepans, &c., a mincing machine should be provided, also a large iron three-legged pot with lid for baking bread.

Messrs. Silver and Co. supply very good folding lanterns with talc sides. Two one-gallon filters, axes, saws, hammers, gimlets, knife-sharpeners and files should be included. A few pounds of six-inch French nails will be found useful for pegging out skins. They do not make such unsightly holes as wooden pegs do.

Skin Preserving—Napthaline tablets prevent the ravages of insects among skins, and for curing the latter nothing is so good as salt and alum mixed in the proportion of two parts of salt to one part of alum. This preparation

should be well rubbed on to the raw side of the skin immediately it is stripped from the animal; the skin should then be folded into as small a compass as possible, and left *for not longer than* six hours in that state. When opened out it will be found that the skin is thoroughly cured and ready for pegging. On no account let it be exposed to the sun when pegged out. Arsenical soap and all other taxidermical preparations are costly and dangerous, and not nearly so effective as salt and alum.

The white ash of the camp fire forms an effective substitute for salt and alum when the latter are unobtainable.

Medicine—A medicine chest is, of course, an important part of the outfit. Messrs. Burroughes, Wellcome, and Co. know all about the medicines requisite for Africa, and they supply all drugs in tabloid form. These keep better and are more portable than powders or liquids.

Quinine, calomel and opium are the most important drugs, to which should be added iodoform, carbolic acid, carbolic oil, strong ammonia, sticking plaster, lint and a clinical thermometer.

A. M. Naylor.

AMERICA, NORTH—To the ordinary mortal, camping out means roughing it, but to an old campaigner it signifies, if not absolute comfort, something akin to it, and this at no extra cost or additional paraphernalia; in fact comfort is as easily obtained as the reverse, if only you know how to set to work.

The most useful pattern of tent for North America is the A shape, which is obtainable in most American towns and costs but a few dollars. The advantage of this tent is that nothing but the bare canvas need be carried, as the ridge pole and two supports can be cut on every suitable camping ground throughout the Rocky Mountains.

For winter work, the Indian Tepee cannot be improved upon: it is cone-shaped, supported by thirteen poles, and permits of a good fire inside, the smoke escaping through the open top. This tent can only be procured from Indians and would be useless in a district destitute of small trees, unless inhabited by those tribes of Indians who always leave their Tepee poles standing when they move camp.

Another useful form of tent is the Lean-to, very serviceable in the mountains when a man may have to carry his whole outfit on his back; it simply consists of a sheet of canvas 8 ft. by 5 ft., which is fixed to windward in the same fashion as the A tent, and represents when erected half the roof of this tent. It serves well as a shelter from wind, snow, or rain.

Tents should not be taken out to America, but procured on the spot. What should be carried in the way of cooking utensils and luxuries entirely depends upon the mode of conveyance, and that is regulated by the nature of the country. It is sometimes possible to manœuvre a wagon, otherwise the ordinary means is by pack horses, canoes, or pack Indians. In any case, however, some experienced person will be required to superintend the arrangements, and the only serviceable articles which cannot be procured on the spot are a good canteen and air bed. Anything else brought from England will only prove an additional expense and encumbrance.

Camping in the States and Canada is simpler work than in British Columbia, where the further we penetrate north, the greater become the difficulties. There is a marked difference between riding with a pack train of horses along a good trail in the beautifully timbered, park-like mountains of Wyoming, and plodding on foot behind a party of Indians through the almost impassable forests of Northern British Columbia. But the requirements for a good camping ground are the same, and consist of three essentials: namely, water, dry firewood, and sufficient level ground to pitch a tent on. No one who has not tried it could imagine the difficulty of remaining all night in a tent pitched on an incline. Fortunately in America, except upon the Prairies, there is rarely any difficulty about wood and water. The former is an important object and necessitates a good axe-man, who knows how to lay his logs Kentucky fashion in order that the frying-pan bread may be properly baked beneath. Where wood abounds there is no occasion to economise it, and therefore when a dead tree is felled, it is cut into eight-feet lengths which are laid upon two short cross-pieces for dogs. Then, if a birch is handy, some bark is stripped off and placed beneath. This burns furiously, and the whole is soon ablaze and in condition to cook the fresh trout just caught, and the venison which will have been killed *en route*.

Camp life is exactly what you choose to make it, and the fussy man and grumbler are an abomination. It is a curious fact that, charming though it be, camp life brings out all the worst traits in nature, and fortunate is the party which can produce four friends who have camped together for a week without at least a coolness between some of them. "Be certain of your man, or woman, before asking either to camp out," is excellent advice, but very difficult to follow. Persons camp out for one of three reasons—Big-game shooting, fishing, or an idle life of pleasure. In the last case it may be presumed that the camp is supplied with servants and every possible luxury, though what people would find to amuse them after a couple of days of this life it is hard to say.

The fisherman may furnish his camp luxuriously, when once on lake or river bank it becomes a permanency, and can usually be accommodated with anything desirable from no-

great distance. A very delightful time can be spent thus, and often free from America's greatest curse, the mosquito, which renders an otherwise perfect summer unendurable. By selecting an open spot in a breezy situation on the bank, and guarding it with mosquito-netting, no great discomfort from these pests need ensue.

Camping after Big-game requires the judgment only obtained from experience. The all-important object is reduction in weight, which necessitates baggage being restricted to the absolute minimum. A horse carries on the flat a pack of 300 lbs.; an Indian 100 lbs.; consisting of Lean-to, blankets, frying-pan, coffee-pot, round pot, flour, bacon, coffee, sugar, and salt.

Find a snug spot to camp in, and if the weather is fine and the thermometer above zero, the Lean-to can be dispensed with, a large fire supplying sufficient heat. A comfortable bed is made by plucking a quantity of tips from fir branches and laying them carefully one upon the other to a depth of seven inches. This also forms a most satisfactory bed upon snow. If bare ground is slept upon, a spot should be selected with slight hollows to fit the hip and

CAMPING OUT. (NORTH AMERICA)

and a squaw twice as much; but for mountain climbing these weights are reduced. Pack-horses must be packed by an experienced hand intimate with the intricacies of the diamond hitch. A hunting outfit will be wanted as follows: Tent, blankets, frying-pan, canteen, three round pots fitting into one another, flour, baking-powder, sugar, bacon, tinned milk, salt, pepper, tea or coffee, and rice; soap, towels, dish-cloths, and also hobbles for the horses. As it is often impossible to camp high up a mountain, lightly equipped expeditions from the main camp must be undertaken. On these excursions, a hunter will carry his own pack of about 50 lbs. weight, shoulder, for they add greatly to comfort, or such hollows can be scooped out for one's self. Late in the season there will be no water, and snow has to be melted in the round pot. To roast fish and grouse, clean and split them, then fix them on sticks, stuck into the ground close to the fire. They will be found delicious. Bread is baked in the frying-pan.

J. TURNER TURNER.

INDIA.—There is no difficulty in procuring tents in India, as they can be readily purchased or hired. For shooting purposes the less camp equipage that is taken the better. For

a single sportsman a Cabul tent weighing 80 lbs. and a Rowtie for the servants is sufficient. In the hot weather it is cooler to sleep in the open air, and even in the day time it is pleasanter to have one's meals and to sit out under the shade of a tree, so that a tent is not much required for living in. It is, however, convenient for keeping things together and is also useful in case there should be rain: heavy thunderstorms occasionally occur in the hot weather. A Cabul tent has a double roof and keeps rain out well. It is also a good protection from the sun in the heat of the day should the shade of the trees, under which a tent can almost always be pitched, not be sufficient. About half of such a tent is taken up by the bed, which is placed along one side. A piece of netting should be sewn along each wall of the tent so as to form three or four large pockets, which are very convenient for holding clothing, books, and other articles in constant use. Another tent which gives more room and is light, is the Bechoba, a square tent with light bamboo framework and no pole. A small place outside the tent can be screened off for a bath with boughs or mats. In the cold weather, the nights are very chilly and there is heavy dew, and it is necessary then to sleep inside the tent.

A good bed is of great importance when out shooting, as nothing rests one more. Folding up camp beds, as sold in shops, are all uncomfortable. The best plan is to have a strong bedstead made, 7 feet by 4 feet, with cotton webbing, costing about ten rupees. No mattress is required; a *resai*, a kind of quilt stuffed with cotton (cost five rupees), answers that purpose. Such a bedstead is easily carried on a cart if placed on the top of the baggage, and the *resai* is rolled up with the rugs. If a folding bed is required, a good one is made with a stout piece of canvas. Each side is sewn round a bamboo and the ends of the bamboos project and fit into stout wooden legs. Another bamboo at each end of the bed fits into these wooden legs, keeping them apart to the full width necessary to stretch the canvas tight. The two ends of the canvas are furnished with straps and buckles which pass round the end bamboos, and pull it tight in that direction. The objection to this kind of bed is that the canvas gets stretched with the weight upon it and bags down. It is convenient to carry, for the bamboos can be slipped out of the legs when the straps are undone and the legs are rolled up inside the canvas. An ulster should always be taken. In the cold weather, at night, and in the early morning, it is most comfortable in camp. Even in the hot weather, the air is frequently chilly if there is rain. In the cold weather, plenty of warm coverings for the bed are necessary, and in the hot weather a good blanket or rug is often wanted in the early morning before sunrise. Carriage is easily procured; the most usual is the bullock cart. A sufficient number of carts should be hired for the trip at so much a day (about 12 annas = 1*s.* each). It is a little more expensive, but much more comfortable than hiring locally for each move. In some places camels are used for transport, in others everything has to be carried on men's heads. For supplies, fowls and milk can generally be obtained, but it is a good plan to buy two or three dozen live fowls and take them with you. Sheep or goats can also be got, but the sportsman will find that the less he draws on local supplies the more popular he will be. In any case he should make a point of paying in person a full price for everything got from the villagers, as native servants are apt to give less than what is due, if payment is left to them. When moving camp, the Patel or headman of the village should be seen and asked whether every one is satisfied. A small tip to the village officials and to such of the villagers as have attended to the camp requirements, should not be neglected, for then the visit of the Sahib and his retinue will be a subject of congratulation. A butler, cook, and a third servant to make himself generally useful, is sufficient for the ordinary sportsman. A good water-filter is essential. At least three *chaguls* (as the leather water-bags are called) are required for each sportsman to have with him when shooting. Two should be taken out on a day's shooting in hot weather, and one in cold, the remainder being left in camp so as to have a supply of filtered cold water in the evening. Water in leather bags becomes quite cold. In order to sweeten new chaguls and remove all taste of leather, fill them with butter milk, put in a handful of turmeric, and allow them to stand for two days.

When out shooting in camp for more than a week or so, it is advisable to take a Bania or native grain dealer with you, who will carry food for your men and feed them at 2 annas (about 2*d.*) per head per day at your expense. Everything that is required in the way of tinned meats, stores, liquor, cartridges, ammunition, and supplies generally can be bought in any of the Presidency towns as well as in England. If horses are used, a supply of grain, which is a substitute for oats in India, must be taken.

J. D. Inverarity.

CANOES AND CANOEING—Cruise the world around, and there is not a place or port you can visit without encountering some form or type of canoe. Go back in history beyond the memory or records of man, and you will still find canoes. The early naval engagements, whether by State against State, or by individuals or clans or syndicates against any body or any State they could come across, were fought in canoes, or in craft of canoe type; indeed, we can hasten down to modern, up-to-date war, and find that

one of the most destructive craft afloat at the present day is distinctly of canoe form—the torpedo boat.

There are those who will define a canoe as a craft that is propelled by paddles wielded by man or men; but there are many types of canoes, belonging to countries thousands of miles apart, in which the paddle, except for steering, is an unknown implement. In these craft, sail is the furnisher of motive power by agency of the wind, or *vice versa*. Then, for civilised modern times, why not steam or electric propulsion?

If the craft is in type, form, and utility a canoe, and is propelled by a man wielding a paddle, she does not change her nature when the man ceases to paddle and hoists a sail, or when he, by suitable machinery, waggles a differently formed paddle, such as a screw propeller. I think there may legitimately be paddling-canoes, sailing-canoes, and motor-canoes; and, further, that the mode of propulsion should not determine the classification of a craft; but that model and capability to do work commonly assigned to canoes and canoeing is the true guide. No matter where you make your choice of investigation on the millions of miles of sea shore of this world, you will find the "canoe" of that place is formed "sharp at each end"; she is a light draught craft, capable of being navigated in very shoal, and also in very rough water; of as easy propulsion astern as in going ahead; except in a few rare cases she is always transportable by manual power from water to water overland; she is long, narrow, and of light construction.

As to the canoes of savage peoples, any well fitted museum will furnish quite a bewildering assortment of models thereof, if historical research be the aim. We want, however, to get to canoeing as a sport at the present day; and in order somewhat to classify the type of craft which can legitimately claim to be a canoe, we may as well suggest "what is not a canoe."

You may have a canoe, and they exist in many parts of the world, of one hundred feet or more in length; you may have a canoe which carries fifty men: or you may have a canoe which will sail under five hundred square feet of sail, or down to fifty feet on small craft. But each of such craft can be paddled by her crew at or over her sides, by hand-worked paddles, without fixed boat-fulcrum: or she can be sailed under easily removable sails and spars; and she will be able to navigate into waters barely ankle deep, and she will be sharp at each end.

Therefore it is obvious that a small yacht, even though her hull be long and shallow and pointed at each end, if she be of deep fixed draught, with heavy spars and gear not immediately removable, and herself so weighted as to be too heavy for manual transportation, cannot rightly claim to be a canoe.

Coming now to modern times, we may take it as settled that the sport of canoeing, that is, river canoeing under paddle, and travelling abroad chiefly under paddle, but with a small sail for use in fair winds, was brought in and popularised by John MacGregor in his *Rob Roy* cruises and books thereon between 1866 and 1869. And canoe sailing in small canoes was similarly introduced by the writer's voyages in the *Nautilus* in Sweden and the Baltic during 1870 and 1871. Here it may be said that possibly there were other canoes more or less rigged; but with the exception of Mr. Tredwen's *Pearl*, which came into public notice immediately afterwards, there were none in evidence.

Clubs were constituted and held regattas, and the effect of the racing competition, which was extremely keen, soon showed itself in the improvement of model, rig, and fitment, which progressed by leaps and bounds and brought the sailing canoe up to such perfection that, though comparatively a tiny craft, there were several sailing clubs which then barred canoes from competing in their races, because they were too successful.

Canoeing, both paddling, sailing, and cruising, quickly became an acknowledged branch of sport, and it rapidly spread to the Continent and to America; and one soon heard of Englishmen, stationed away in far distant parts of the world, building and using canoes. *Canoe Travelling*, a book published by the writer of this article in 1871, was the first book on canoe design, rigging, and fitting, and it gave drawings thereon; and thereby the sailing canoe of those early days was known as of *Nautilus* type. The *Pearl* above mentioned, which came out shortly afterwards, was of somewhat different lines, or shape, but only so in detail, and of the *Nautilus* and *Pearl* new specimens of improved model and rig were steadily produced year by year, and led the fashion in building. They continued so to do, and to race, up to 1890, and since that year up to this date, 1897, *Nautilus* designs have been from time to time published. Of course there are many men who have produced designs and built canoes which, in their opinion, are of original design; but distinct type they can hardly fairly claim, and it matters not here, nor indeed at all, to seek in them family likeness to *Pearl* or *Nautilus*. I will merely, in regard to the history of the sport, say that when these two sailing canoes were produced there were no existing sailing canoes of any practically valuable nature to copy, and the only book dealing with such craft at that time was *Canoe Travelling*; but since then canoeing, in technical articles and books, has been constantly before the public here and in America. The well-known technical book, *Yacht and Boat Sailing* (Horace Cox), has, in each of its eight editions, con-

tained a complete up-to-date "Canoeing Section," with designs, and drawings, and articles from the pens of "Nautilus," "Pearl," "Cassey," and many other canoe men. (The 6th and 7th editions give the fullest amount of designs and details, the advent of small yachts' designs having rather crowded the canoeing in the eighth edition.)

At all times in the life of the sport of canoeing there has been a marked line between sailing and paddling; there have always been in each of the clubs, both in England and in America and Canada, paddling men who never sailed a canoe, and men who owned canoes built entirely for pleasure paddling, or for racing only. In like manner, there has always been a division of men in each club who never used a paddle in their canoes except when a dead calm overtook them out sailing. But naturally also there have been a few instances of canoeists who have raced successfully both in the sailing classes and in paddling; and on the two £50 challenge cups of the Royal Canoe Club, the sailing and the paddling, may be found three or four double championship holders in the twenty years' existence of the cups.

The racing paddling canoe is very like the hull of the sculling wager-boat, but without the rowing fittings and seat; the racer is built of two streaks only, one on each side, of cedar less than one-eighth of an inch thick. As to size, they of course vary according to the size and weight of the men they are built to carry, but probably an average size would be 20 ft. long by 22 in. wide at top-side. They are decked fore and aft, retaining a bulkheaded "well" or open section of about 4 ft. in length, guarded by a narrow side deck and shallow coaming. In this "well" the man sits on the floor, and has at his back a suitable back-board to press back upon, and an adjustable foot-board or stretcher forward. The paddles used in England are very short, 7 ft. 6 in. to 8 ft. long, with broad spoon blades; the stroke is made close along the side of the canoe, with the body kept sitting erect. In America, the racing paddlers sit on comparatively high seats, some kneel, some even stand up; they use very long paddles and usually have the blades set up at right angles to one another, so that the one passing through the air is doing so edgewise while the other is square in the water. Moreover, the American canoes used in paddling races are much larger, *i.e.* wider and deeper, though shorter than the English "single-streak"; indeed, the single-streak could not be "sat" if a raised seat were used, and it is only by careful practice that one can sit her for effective work — that is, in the extreme models.

The open Canadian model, in which single blades, or half-paddles, are used, is decidedly the favourite river canoe of the present day. Though a considerable number of *Rob Roy* type, or quasi-*Rob Roys*, may be seen on any of our large rivers, they are dropping out. For real travelling, the Canadian type, with its open body, lends itself so easily to ample stowage of camp gear, to quick stowage or discharge, and to easy transportation, that it is only the inexperienced who will, for river or small lake travelling, take the small "decked" canoe of *Rob Roy* type or the later modifications thereof.

Where, however, the tour is to extend to crossing large lakes or to cover some open estuary work, the decked canoe is almost a necessity; but then it is advisable, for such work, to go to the sailing canoe type for safety and comfort. I have had experience on large lakes, in a small decked canoe of semi-*Rob Roy* type, of being wind-bound on an island with food supply growing short and seas running too heavy to allow even a hope of crossing to main land; luckily, the wind gave in before the man had to. A fine summer evening is apt to tempt one to make camp on an island, so as to be free from inquisitive visitors, both of man and of animal nature; but morning may break with a summer gale blowing, and then is the time to appreciate the value of every detail of the complete sailing cruising-canoe. In the first place, her reserve of stores will, or may be, ample, but even if the rough water has to be faced, she will do it, if properly handled, in anything less than a real hurricane.

With regard to travelling in canoes on inland waters, it is well to point out that such work is of two distinct kinds, and that to accomplish each in perfection needs a totally distinct canoe type for each. For the quick-running, shallow, rocky river, with vicious rapids and dangerous falls, with forest portages and the necessity of camping out each night, there can be no question that the open or partly decked Canadian type is the best. The *Rob Roy* type is well enough on easy rivers, canals, ditches, and such like; but in a really bad rapid, and for rough portaging, she is a poor craft. The camp kit, clothes and stores that can be stowed in canoes of the *Rob Roy* type are about fit for a doll, certainly not reasonable for a man, unless an hotel is more or less a certainty every night; even then, in addition to the time wasted in minute packing and unpacking there is the frequent experience of getting all the cargo soaking wet, and stores spoiled after a wet passage through a rapid, or by the leakage common after a few days of bumping on rocky shallows.

In the Canadian type all the perishable stores, clothes, bed-clothes, charts, &c., can be stowed in waterproof "kit-bags," *i.e.* long, cylindrical bags with an internally flounced mouth, which can be fastened so as to be quite watertight. The tent, preferably furled on or around its poles, so as to be ready for immediate setting up, can be stowed lengthwise in an open canoe, whereas it must be disjointed and packed away

Drawn by E. Austin. H. Abbey. Swan & Electric Engraving Co.

Canoeing

in parts in a decked canoe. The kit-bags, cooking gear and other stores stow amidships; and the two men (preferably two) are stationed, one in the bow and the other in the stern quarters of the canoe. In this way, when she grounds on a shallow, the crew jump out and guide her or partly lift her over; or in a few moments the cargo can be lifted right out and landed, and the canoe can be carried over any obstruction. Everything should be lashed in, so that in the event of a capsize nothing is likely to fall out. In this connection, a plan of mine, which will take a lot of beating, is—fit a removable 6 ft. canvas compartment to the middle third of the canoe. It is made thus: One sheet of fine, close-woven duck, either "in the piece" or built in cloths 6 ft. wide, is cut to a length sufficient to lie close across and around the inside and bottom of the canoe, and then across to meet in the centre at the level of the gunwale or top-sides. Two pieces of duck are cut to form bulkheads or ends, of the exact form and size of the transverse section of the canoe; the top of the after one is cut at about 1 ft. above the level of the gunwale height so as to leave this 1 ft. to fold in; the other forward bulkhead is preferably left at its top 6 ft. long, so as to act as flap or cover overalls in wet weather. The edges of the bulkheads, so far as they represent the cross-section of the canoe, are then closely and strongly sewn to the edges of the sheet which forms the bottom and sides and lids, and these edges should be neatly roped and have suitable beckets for lashing down to the bottom and sides of the canoe. When packed with all the bags of stores and gear the two flap edges, having eyelet holes, can be laced or tied together, and the forward bulkhead flap part is then folded aft over all and forms a roof. The whole thing may be waterproofed with linseed oil, or the top flap only; in the former case this "bag-well" will be found very useful as a waterproof ground-sheet for sleeping on. Or, on a pinch, when caught out at night without the proper tent, the canoe can be bedded on shore beneath suitable tree branches, and the bag-well suspended therefrom and spread by a few bent sticks around its real bottom (now its roof). A very fair bed-room is made, and the front flap will just about cover the kit. If the canoe has a fair amount of end decking, say 2 ft. 9 in. or 3 ft. on a 16 ft. canoe, the open body of the canoe will be thus covered in, and be pretty nearly, if not quite, rainproof. Such quarters, of course, are rather cramped for two men, though ample for one; but it is far better to sleep dry in a semi-sitting posture than to have to drag through a wet night with no shelter.

The first point to which an experienced canoe-cruiser looks, after assuring himself of a suitable canoe and an expert companion, is a reliable night camp-kit. There is no such thing as a "standard camp-kit"; what is a perfect kit for one man may be the very reverse for another. One man will fiddle over an intensely wonderful mechanism for cooking—a spirit-stove surrounded by a swarm of little pots and instruments (of about half of which he will lose tally in a two weeks' trip) and take an hour morning and evening in packing and unpacking a sort of Chinese puzzle; while another man does the whole work of cooking over a fire of drift wood with a tin Billy-pot, a fry-pan, a tin mug and a tin dish. As to clothes, the experienced man will have nothing but flannel and wool. The only linen fabric in his outfit will be handkerchiefs and perhaps a white cap cover for hot, sunny days. The bedding may be summed up thus: two thick blankets, one to go folded as a mattress for warm nights, or both to be used on cold wet nights; one inflatable pillow covered with blanket bag (which can be taken off and dried at the camp fire). A suit of pyjamas of thick wool must be taken, and a pair of old fishing wading stockings, cut to knee-boot length, are very useful for early morning wet grass movements, when packing and launching.

Matches should be kept in corked bottles, and tea, tobacco, sugar, salt, and many other stores which are liable to suffer from damp, should be kept in carefully fitted tins stowed in waterproof bags; especially biscuits, which are the most convenient bread stuff that can be carried. As to adjuncts to camping, those essential are an efficient lamp with store of wick and oil, a small axe, and several sailor's sheath-knives. A can of petroleum is not a bad thing in camp for quick fire-getting in wet weather, but it is a fearful nuisance in the canoe unless it is absolutely oil-tight in every way. If a gun is taken, it should be provided with a bag-cover like a sponge bag, absolutely watertight when its neck is tied tightly; and the cartridges can be carried tied in a sponge bag—indeed, sponge bags of mackintosh are extremely useful in many ways in canoeing, where rain and duckings are not unknown.

We will now turn to what is really the leading feature of present day canoeing as a sport—and that is, undoubtedly, canoe sailing. Canoe sailing, with one exception, which we will mention and then leave altogether out of consideration, is now clearly divided into two branches, namely, the sailing canoe and the canoe yawl. There is a further claim upon the title "canoe" which is in no way legitimate. It arises when some small yachts, heavy, bungling, deep-draughted chunbungoes, claim, because they have a sharp ended stern, that they are canoes. If this were admitted, is not a first class battleship, with her sharp ended stern, "a canoe"? Form, as we said in opening this article, must be taken in conjunction with capability of performing the duties common to all canoes, such as navigating shallow waters, and

with portability. Here it might be retorted—"You opened by bringing in a torpedo boat as of canoe form." Yes, but bear in mind that small torpedo boats can navigate in shoal water, can be hoisted on board larger ships, and can be portaged from water to water by railway train—whereas a battleship cannot.

Now the class to be wiped out is remarkable in its way—it is the racing machine class. It has grown upon the sport of canoeing as barnacles grow on a ship's bottom; it has grown upon fair canoeing, upon true excellence of model and rig, and upon good seamanship; it has engrafted the athlete and the acrobat upon the sport of canoeing. Neither of them was wanted, and the result has proved very bad for the sport,—to a degree never anticipated when the old stringent rules of classification were relaxed.

While retaining canoe form of great excellence in the body of the canoe, and even in many of her fittings, such as centre plate and rudder

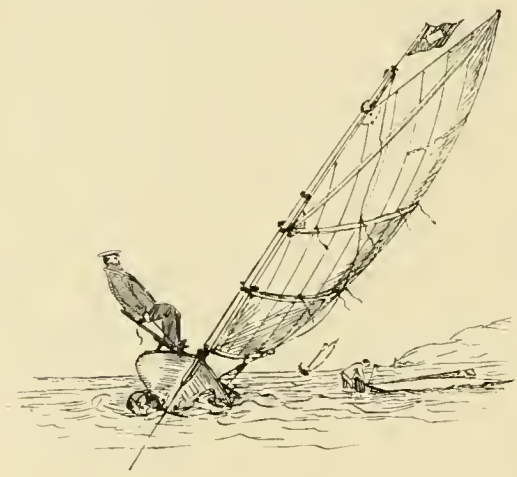

FIG. 1.

and sail area, the relaxation permitted the use of the effect of unlimited beam as a sail carrying power, while the rule at the same time limited the actual beam to a ridiculous minimum. The rule limited the beam of canoes to 30 in. (at the present moment 36 in.), and with the man sitting on his deck and leaning out to windward as the puff struck his craft, sail had to be carefully handled, the rig had to be perfect in all its working parts and more or less get-at-able; therefore there was necessity for a practical "well opening"—indeed, the early sailing racing canoes were as fully fitted and as able cruisers as any could be under the knowledge of the time. The relaxation came in, and though the beam of the canoe remains limited, the acrobat is permitted to use a sliding seat across the deck whereby he slides his whole body, legs and all, right outside to windward and thus obtains such an amount of sail-carrying power that he is more in actual danger of capsizing to windward than in the ordinary way of to leeward; he gains the advantage of nearly 8 ft. of beam without its disadvantage in surface, and yet this is over a limit of 3 ft. of beam, *i.e.* 5 ft. advantage in a size of craft in which an inch tells as much as a foot does in a yacht.

In addition to the acrobatic plan or balance seat allowed by the rules, the racing machine is not required even to have a hole in her deck. Some canoes have been produced in England without any "well," or hatchway even; some here and in America had sails of standing rig, *i.e.* not hoisting or lowering or reefable, but stuck in—as in model yachts. In these craft the sheets are trimmed for the leg of the course, and off she goes at gun-fire; the man is out on his slide, 4 ft. outside his canoe, and he can do nothing but steer and balance till he comes to the turning mark on the course. Here he quickly snatches a fresh trim of sheets for the new leg of the course, and off he goes again. If she gets an extra heavy knockdown puff and capsizes, all the agile acrobat has to do is to jump out on to the centre plate, which is now lying horizontal on the top of the water, and to prise the canoe up, using the slide-seat plank as a lever.

The true canoe, fitted to be useful and comfortable, otherwise than for mere "pot-hunting," has no chance in racing against this machine type of canoe and man. The infinite harm done to sailing and racing by these machines since about 1889 is now beginning to be universally admitted here and in America, but the corrective measures are far too tardily imposed. They are creeping on, however, and it may be quite on the cards that by 1898 racing machines will be impossible in English canoe racing. The racing class is now, by the legislation passed at the autumn meeting of the Royal Canoe Club, held in November, 1896, so well overtopped by the "cruising canoe" class that, "machine racing" being no longer a certain road to winning the chief cups and prizes, intending competitors will have at least the option of building a useful, comfortable craft with a very fair chance of winning prizes by sailing skill and merit, rather than by mere acrobatic skill and luck.

Of the various canoe clubs in England, unfortunately, no two have the same rules in entirety; there is no governing power, no canoe racing association. Of late, however, the senior club, the Royal Canoe Club, has thrown all its races open to members of all other recognised clubs, and to gentlemen amateurs. As such visiting competitors must build under R.C.C. definitions, the production of craft within these rules is steadily insinuating through the outports. The following are the leading definitions of canoes and canoe-yawls, which practically govern the production in 1897.

"The definition of a **canoe yawl** is a

follows. Beam not less than 3 ft. Rating $\left(\frac{\text{length of load water line} \times \text{sail area}}{6000}\right)$ not to exceed 0·5. She shall be sharp at each end, with no transom or flat stern, and no deck seat shall project beyond the perpendicular of the sides. Each canoe yawl shall be fitted with two fixed transverse bulkheads to be approved by the sailing committee such bulkheads shall not be more than 10 ft. nor less than 6 ft. apart and shall have between them a suitable well or hatchway opening. Such bulkheads shall neither of them be placed within 3 ft. of either end of the yawl if she is of or under 18 ft. in length, or not within 4 ft. from the ends in yawls of over 18 ft. length. (*Vote*—other bulkheads may be fitted but shall not be placed between the bulkheads above mentioned.)

"A **cruising canoe**, to be classified for racing purposes, shall be sharp at each end; with no transom or flat stern. Any metal keel, centre plate, or ballast shall be detachable from her; and any 'bucket well' fitted within the sleeping compartment shall be detachable. *Maximum dimensions.* Length overall shall not exceed 16 feet. Beam not over 42 inches. Sliding seat, if any, when rigged in to be within the beam of the canoe. Her fixed draught including keel, or drop keel when hauled up, shall not exceed 14 inches. Extreme length of any spar shall not exceed the load water line length or rating length. Rating $\left(\frac{\text{length of load line} \times \text{sail area}}{6000}\right)$ not to exceed 0·3. *Minimum dimensions.* Depth *inside* from deck to skin (to be taken at any distance within 3 ft. of mid overall length and at not less than 10 in. out from the middle line) shall not be less than 12 in. Depth *outside* from top of deck at mid line to underside of keel (taken anywhere up to 1 ft. from either end) shall not be less than 12 in. Sleeping space not less than 5 ft. 6 in. in length, with hatchway thereto of not less than 18 in. in width for a distance or length of 3 ft. (*Vote*—Any canoe built prior to and not altered since 1894, as to beam, depth, or well opening dimensions, and not over 42 in. of beam, shall be allowed to sail in races which admit the cruising class, irrespective of depth measurement, but otherwise complying with such qualification.)

"A **sailing canoe, for racing purposes**, shall be sharp at each end, no transom or counter or flat stern shall be allowed, and the rudder shall be hung abaft the stern. Each sailing canoe shall be fitted with two fixed transverse bulkheads, to be approved of by the sailing committee. Such bulkheads shall not be more than 8 ft. or less than 5 ft. 6 in. apart, and shall be placed one forward and the other abaft the 'well.' Neither of such bulkheads shall be placed within 3 ft. of either end of the canoe. (*Vote*—Other bulkheads may be fitted but shall not be placed between the bulkheads mentioned in the above rule. Spar doors are allowed in such bulkheads but they must be made watertight to the satisfaction of the sailing committee.)"

Such are the rules which govern the Royal Canoe Club's racing for 1897, and as they can only now be varied or amended by a majority vote of four-fifths at any autumn meeting, it is highly probable that they will stand unaltered until autumn, 1898, when, for following years, the present majority requirement will end if not re-enacted. It is also well to note here that the rules further require the load water length or line to be marked conspicuously at each end thereof in "usual racing trim," with crew on board, and all gear, &c., used in racing. The rules of classification in other canoe clubs in England differ only in a few details, and these only need attention from those who intend racing. I take it that it is only possible to show at present what the canoe has developed to in the present day, leaving variations of detail, whether of construction or of club definitions, to be looked up in the technical books by those interested therein.

All the clubs have the two distinct classes of canoe-yawl and sailing-canoe. The variation of the definitions in different clubs is minute, and probably the sport would all round be better served were the present local peculiarities dropped and one set of rules followed. Taking the canoe-yawl first, the only real distinction between such craft and sailing canoes is her size, but it was found convenient to name the classes differently. The term "yawl" has nothing to do with rig, though it has been for years improperly applied in yachting by some to a class of rig known to sailors as "dandy rig" or "jiggers." The "yawl" proper is, and always has been, a type of hull or model used both for sailing and rowing, in which the rig has nearly always been "main and mizen," with the mizen inboard or forward of the rudder. Therefore she is a "ketch" proper, never a "dandy" or "jigger" as to rig or name. Boat "yawls" on our coasts are always long, shallow draughted, and sharp at each end, rowed or sailed as there is calm or wind, and beachable and portable indeed, of canoe nature all round; they vary from 40 to about 18 ft. length, and about five beams to length.

A "canoe-yawl" in 1897 is very loosely defined by rule, but in practice she is kept pretty well within canoe nature. In size she is a "half-rater" under the racing rules, which can be set out in "size" to mean just about 16 to 18 ft. water line, 4 ft. 6 in. to 5 ft. beam, 12 in. lowest freeboard, and a depth of immersed body amidships of 9 to 12 in. Below the body may be a few inches of keel for grounding on, but "canoe nature" is at once removed from such craft when they are fitted with fixed deep keels, whether ballasted

or not; they then have no rightful claim to the titles "canoe" or "yawl." Of course all canoes obtain their lateral resisting powers from centre plates or drop keels, and the form does not matter so long as they are capable of being hauled up for beaching or shallow navigation. The overall length of canoe-yawls is not fixed by rule, and considerable overhang may be given: the amount depends on the nature of work contemplated. For instance, for river and small lake work very little overhang is needed, and weight is thereby saved and the craft is more easily portable by train or cart; but for open sea, large lakes, and estuary sailing, reasonable overhang is essential. In this connection it is curious to note that all the canoes on the great lakes of Africa have overhang at each end, especially so at the bow; so also, in marked degree, along the N.E. coast of the Pacific, and in all surf boats the world over. The main objection to overhang usually heard in this country is the extra first cost in building, but there always have been men who would "spoil a good ship by the saving of a ha'porth of tar."

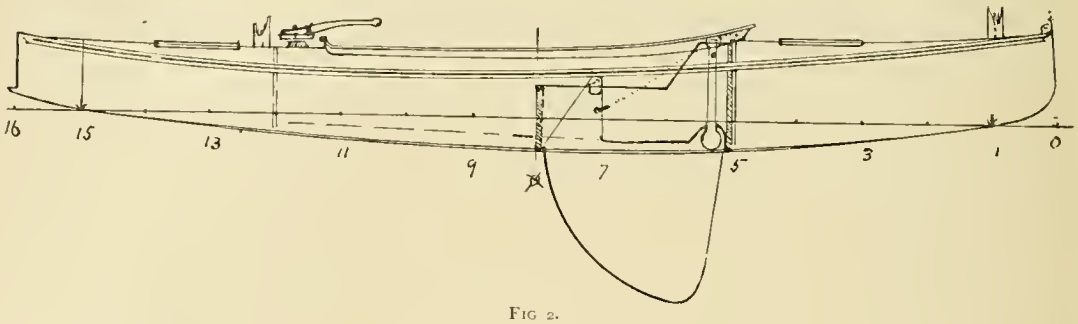

FIG 2.

The use of the canoe-yawl is that she can (or she is faulty in design if she can't) do all the sea-going work which can be got out of a small yacht, say, up to three or four tons; she can accommodate her one or two "crew" (according to her size). She can be hoisted on a yacht's davits, or on to a railway truck, or be carted for transportation to any part of the country, or on a steamer, or on her own wheel-carriage; she can be housed in a shed or boat-house; she needs no professional crew. Where the yacht cannot go the yawl can go, that is, into harbours which are all but "dry"; she can also go up shallow creeks and rivers. In short, she gives the least expensive and the most extensive form of yachting. So far as open sea is concerned, a well-built and fitted canoe-yawl with a liftable bulbed centre-plate would do all the work that has been done by small boats crossing the Atlantic, and at about one-third the risk that they encounter.

The "cruising canoe" (see the details of dimensions given above) can do very nearly all the work which a "yawl" can do, but of course must be put to it with greater caution. Those who "fears nothing 'cause they knows nothing," as was said of the Brighton trippers when out sailing, have no business to go canoe-sailing; they only bring a bad name on the sport and a silly end to themselves. It does not follow that an expert yachtsman can sail a canoe; quite the reverse is my experience, but an expert canoe-sailor is seldom at fault in yacht-sailing—indeed, many of our best yacht-racing men have graduated in sailing canoes.

As before said, it would be too long a matter to give description and drawings of the numerous types and models of sailing canoes of the present day, or of all their fittings. I therefore confine myself to giving a scale drawing of the latest general purpose type, the "cruising class" canoe. More properly it is the "sailing canoe," in which both cruising and successful racing may be enjoyed. The same model enlarged makes an excellent canoe-yawl, and the racing man will find that he cannot depart very far from her lines and principles in attempting to produce a racing machine—that is, a successful machine,—so she may be taken as typical of canoe-sailing in general, leaving variations of detail to those who desire special racing or special cruising qualities. In the elements of design which go to make a sailing canoe the leading principle to which the designer has to give way is "compromise." Every item in the above design is fixed to an eighth of an inch by reason of compromise; if one went boldly for one desirable quality, probably half a dozen other useful, if not actually needful, qualities would be sacrificed.

It will be seen, of course, that the body plan from which the building moulds for sections are taken is drawn at double the size of the other plans; this is on account of space in the publication. The sections given are 2 ft. apart, commencing at 1 ft. from the fore side of stern. There are watertight transverse bulkheads at No. 5 and at No. 12 stations. There is just comfortable space to sleep in (that is, for any one accustomed to canoe-camping). The masts step in watertight cases so as not to let rain

drain into the stowage spaces, which, it will be seen, are got at through the two hatchways. The centre-plate can be unpinned and then lifted clear out of the canoe; it should be 80 or 100 lbs. in weight, especially in case the owner is not an expert in working the sliding deck-seat. The canoe is preferably built in the manner known as ribband-carvel; that is $\frac{1}{4}$ in. or $\frac{3}{8}$ in. planks are brought edge to edge as in ordinary carvel building, but here ribbands of $\frac{3}{8}$ in. × $1\frac{1}{4}$ in. mahogany are laid fore and aft on the inside and cover the plank joint,

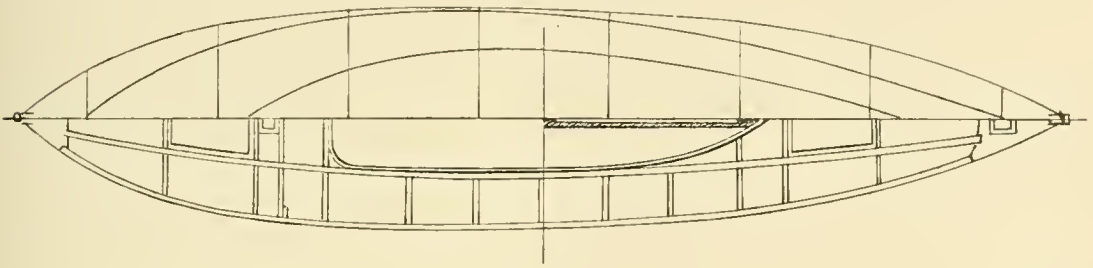

Fig. 3.

the plank edges being riveted or screwed into the ribbands. It forms the strongest light build, and if well done is least liable to leak or crack; the only "timbers" or frames required are one at each bulkhead and one at ×. Sometimes, as in canoe-yawls, small steamed ribs are let in next the plank to help it stand bumps, but they weaken the ribbands for a certainty.

All such fittings as hatch-covers, drop-plate rudder, deck-steering yokes, tillers, wheels, cleat racks, centre plates, spar doors, indeed a hundred and one important little fittings have from time to time been perfected till their working is now certain, but a description even of the necessary fitments would be far too long for this article.

Possibly the sail plans will give those who are novices to canoe detail the best general idea of the canoe as a whole. As to any particular sail plan, or even type of sail, it is extremely difficult to decide which is better than another—it depends so essentially on the proficiency of the man who is to use it. Simplicity in rigging is often as dangerous as can be the greatest complication of strings and blocks: I have myself worked out six distinct types of sail, and among them I have even now difficulty in picking the one likely to be most suitable all round; but taking that which I have myself found very effective for sailing and handy for cruising, I give a drawing of it here, and remind my readers that the rigs of all kinds are fully represented in all detail in *Canoe Travelling* and in *Yacht and Boat Sailing*.

There is one elementary point in regard to canoe sails which should always be present to the mind of any one about to rig a canoe or desirous of criticising any given canoe rig design: it is that a boat's perfect rig may be a canoe's poison; the crew of the boat or yacht can stand about and move fore and aft in her, but the crew of one man in the canoe must do everything from one position and must handle the boat at the same time that he man-handles the sails. This may be appreciated on looking at the sectional sketch of the canoeist sitting out on his slide deck seat (Fig. 1); he steers with a "flail" handle to his tiller. Assume that an extra heavy streak of wind now lays his canoe flat; he must either "spill" his sail by letting go his peak halliards or he must jump on to the centre-plate to right her. The "sheets" must be kept fast, otherwise the sail goes into the water more and more, and when he rights her by balance, the boom with the sail full of water swaggers out on the opposite side and probably capsizes her again; indeed, it will do so time after time.

There are many who say the sail should be on single halliard so as to come down on one string being let go. I am certain from long experience that, at the "agony angle," it never will come down, and therefore prefer a main, or jaw-halliard, and a peak halliard. The peak halliard on a puffy day can be carried in hand from tack to tack and be worked far more effectively than the sheet, provided the boom is held by its topping lifts. In such weather the mizen of course must be reefed, that is to say except in close racing.

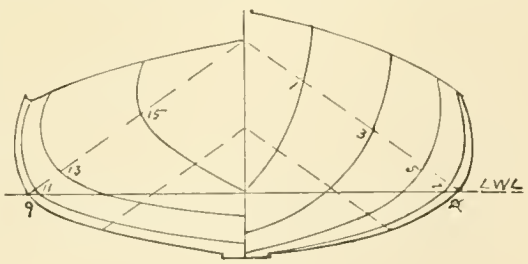

Fig. 4.

Caution is the first quality of a seaman—dash and daring go with caution, but there is no such thing as a foolhardy seaman; a foolhardy man is no seaman. On the mizen no jaw-halliard is necessary, but it may well be fitted, and I prefer

to have it; it is only one extra line, and it has many uses. Perhaps, however, this is going too far into refinement of sailing.

Of the many rigs which have been used, the

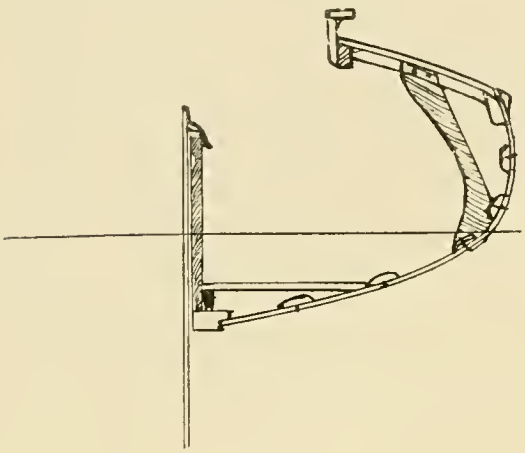

Fig. 5.

balanced battened lug is probably the most popular and possibly the most effective, but it has some decided faults for those who sit high on a deck seat. It is the most dangerous in "jybing"; the boom does not top up, and it either hits the man in swinging across or it goes smash into the water. Hence abaft-the-mast rigs are growing in favour from the handling point of view.

Of all the rigs I have tried and have seen tried, the hoisting-spreet rig is about the best; it gives the shortest spars for area, and if neatly

Fig. 6.

rigged is the most capable of many changes and uses. In 1870 I brought out a hoisting-spreet, but it had the fault then of being practically a standing-spreet so far as its spreet was concerned; it was really a sliding-gunter spreet. Since that time, finding it a most effective sail, I modified or improved the idea till I got to what may be called the lowerable-spreet, and in 1885 and 1886 I rigged sails of this nature, only differing in that one was a proper spreet-sail hoisted by the luff-rope and head-rope at the throat angle, (see Fig. 7), and the other had a luff-yard and a spreet so as to use a shorter mainmast. In effect, that rig was a gaff main-sail with a jib-headed top-sail, the yard of which did the duty of a topmast. This sail has since been produced, we will not say copied, on several American canoes, but they all miss the very point of the rig for which I brought it out. As we are not here dealing with the refinement of detail of a racing rig, I take the hoisting and lowerable spreet-rig as the most simple and effective rig, that is, the roped luff-sail. The sail plan shows this rig set

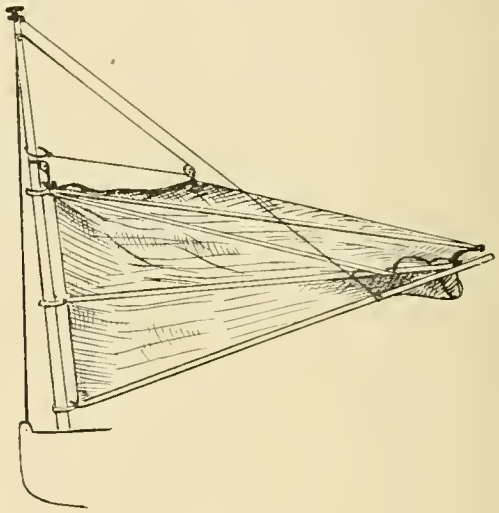

Fig. 7.

and a sketch shows it partly set, or also partly lowered, as it can be for a heavy squall or a bad jybe, or for coming into port among a lot of craft. In this case the main or jaw-halliard is kept fast, and the peak is lowered. The luff-rope on the sail must be strong, and dressed with linseed oil so as not to stretch or be affected by wet or weather.

The sail plan shows a big mizen; this can be shifted into main position and a small mizen can be then set aft, the mainsail and spars meanwhile lashed along on deck; this is specially useful in bad weather or when a night trip has to be made. All the riggings and the semi-automatic reefing gear are fully described in the books I have already mentioned, and they are of the first importance to the successful working of the rig.

The drawings here given of an open canoe, of Canadian type, show a canoe 16 ft. long by 32 in. beam, $7\frac{1}{2}$ in. freeboard, and 4 in. draught of water. She would on that draught displace

about 480 lbs., so that, if the canoe comes out, say at 72 lbs., with all her gear, canvas, pack, &c., and the crew at about 308 lbs., she would carry about 100 lbs. of camp and other gear. The midship pack of gear, spoken of above, would fit between the two cross-beams, with 6 in. of it tucked under each. The cross-beams are built into the canoe, but the seat thwarts, shown shaded, are dropped in, dove-tail fashion, so as to be removable; the cross-beams can also be so fitted if it is intended to sleep in the canoe, and to remove them.

Paddles, single blade, are usually 5 ft. 6 in. long; but a much longer one is often useful, and at least a couple of spare paddles should be carried on a cruise. A jointed double blade paddle is often favoured, but is only advisable when a single hand is to work the canoe, and the journey is mostly on quiet flowing rivers or work, appearance goes for nothing compared to efficiency.

The Macatawa is a wooden-built and planked canoe, sheathed with a tough prepared fabric, cemented over the outside and finished with repeated coats of paint; the life of such a canoe among rocks and snags must be immensely superior to that of the ordinary wooden canoe. G. Harris, of Laleham-on-Thames, imports these canoes.

As to price, a 16 ft. open canoe with three single blades, should not exceed £18. Many of them can be got at "a guinea a foot," and the best of finish, with carpets and cushions, comes to about £20, complete.

The institutions for the promotion of the sport of canoeing, though not very numerous in England, are sound, going concerns with solid capital; they have, or the sport has, suffered

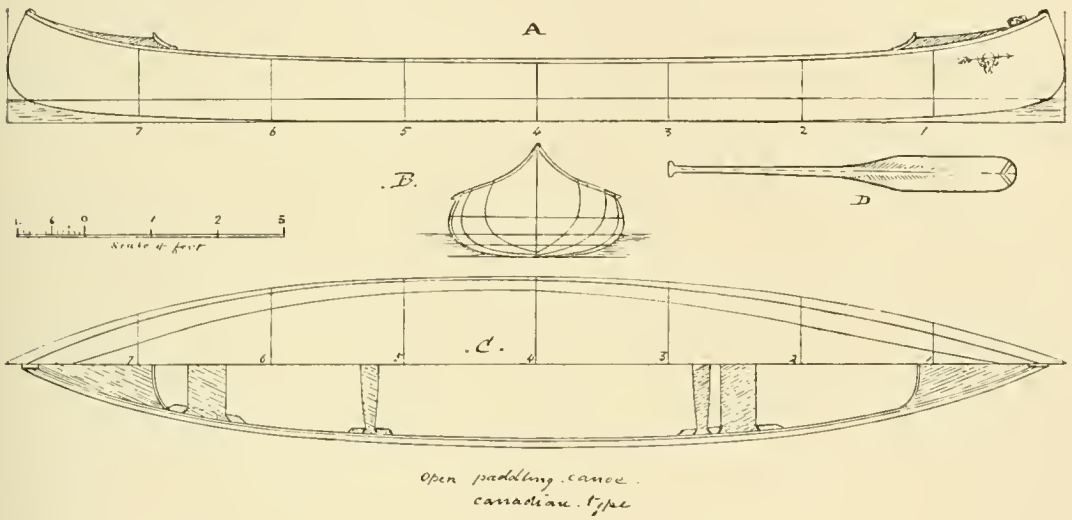

Fig. 8.

canals. For navigating rapids or lakes with two men in the canoe, far more effective work can be done with "single blades"; these should be of the toughest wood, even at the expense of being a trifle heavy, and they should be protected at the blade end by copper ∧-shaped bands riveted on each side, as shown in the sketch.

For ordinary river work, nothing looks better than varnished cedar or mahogany, built up ribband-carvel fashion, such as may be obtained to perfection at Turk's, at Kingston-on-Thames; they are amply strong enough for all but the roughest camping cruise. These Thames canoes are run very close in build and finish by the canoes of the Stricklands of Lakefield, Ontario (which can be got at Strickland's depot at West Drayton, England). But for rough, knockabout work, probably the Macatawa sheathed canoe, of North American Indian model, would be found the most lasting; and of course for real cruising much in the last ten years from the rapid growth of small yacht sailing and cycling. The small yachting, in half-raters, was injurious to canoeing; but many men are now finding out to their cost that a half-rater racing machine is not a bed of roses, even for the pleasure of sailing, and is a little heap of expenses out of all proportion to the sport it furnishes, and such men are coming back to canoe sailing and cruising.

The Royal Canoe Club, with His Royal Highness the Prince of Wales as commodore, leads canoeing in England; its headquarters, or club house, is on the Thames at Kingston, and in 1897 a new and permanent club house was erected with all conveniences for housing members and their canoes. The paddling regatta, including some sailing, is held annually on the Thames at Kingston, and the sailing regatta, a week's racing, is, in 1897, again to be held at Burnham-on-Crouch, a salt water, and

fine, open, sailable estuary in Essex. The club has two £50 challenge cups, one for paddling, the other for sailing, and gives a large number of prizes for all classes of canoes.

The Mersey Canoe Club at Liverpool is almost as old as the Royal, and is a very stable and sporting institution. The "Mersey" has not given way to racing quite so extensively as the older club, but none the less it has produced some very excellent canoe sailors, and some canoes and canoe-yawls of considerable merit. Knowing the Mersey well, I have no doubt that were the Mersey Canoe Club now to institute a useful class of sailing canoe, and to give a substantial programme of Saturday racing for the season, the canoe would, on the Mersey, above all places around our coast, show itself in front of small "raters" and open boats in giving sport and pastime for money expended, and the club would have to look for a more extensive boat and club house on the influx of members.

It is impossible here to go into the history or even description of all the canoe clubs, or to decide whether some are not more properly "sailing boat" clubs; and as some of the clubs are so bashful of appearing in print, it becomes difficult to know whether they are flourishing on thousands of pounds of capital, or have become shelved on the glory of past attainments. There are, or were up to a late time, the following clubs: the Clyde, the Humber, the Wear, the Tyne, the Sunderland, the Northern (on the Tyne), the Ulster, the Midland and the Forth. The British Canoe Association is of course well known because, though essentially a club in its organisation, it caters for visitors from all the other clubs as well as for its own members; it is by its constitution only a cruising or camping club. Once a year, however, it holds some races at a regatta during the camp meet; these races are handicapped events and therefore, though furnishing some good sport to those at the meet, they do not in any way represent speed or quality in the canoes or men who compete: indeed, under the circumstances of a cruising meet of men from various clubs owning canoes produced under widely differing classification rules, some ancient, some modern, it is impossible for the B.C.A., without any classification rules of its own, or the adoption of some leading club's rules, to do otherwise than sail handicap races, if races are needed.

The real commanding charm of canoeing over all other aquatic sports is that where there is water there is the canoe's sphere of action. It matters not whether the water be sea or a mere brook, a lake or a fish pond, canoeing can be more or less enjoyed, especially if the right type of canoe for the nature of the water is chosen. The canoe, in one form or other, may be an adjunct to yachting, to fishing and to shooting; she may be useful for travel, for exploration or even for war; but, above all, the sailing canoe on moderately open water is the finest of health-givers, and is so at the least cost. The canoeist can at his own will sail alone or elect to sail in company; not so the yachtsman, who must have a crew, if not guests also. The canoeist can carry his hotel with him; not so the shooting or fishing sportsman, the hunting man, the cyclist or the golfer. All these are dependent on house or hotel when the sport is over, whereas living in a canoe is part of the sport of canoeing.

WARINGTON BADEN-POWELL.

GLOSSARY.

Apron—The macintosh cover put over the canoe "well" opening when the canoeist is seated in the "Well" (*q.v.*), in order to prevent waves from splashing into the body of the canoe. It is not infrequently replaced by a sliding wooden **Hatch.**

Back-board—A board usually hung from the deck coaming, or the bulkhead directly behind the paddler, against which he leans, and presses his back when paddling; his feet giving pressure from the foot-stretcher.

Beam—The greatest width of a boat.

Bearings—The line of flotation formed by the water upon a boat's side and bottom when, with all on board, she has come to the angle of best stability for such displacement, or sail pressure.

Brace [*See* STRETCHER].

Burdens—The boards laid upon, but not fixed to, the lower part of the frame of the canoe. Also called **Floor-boards.**

Camber—The arch of the deck from one side to the other; contrasted with **Sheer**, which is the curve fore and aft.

Canoe—A light boat, sharp modelled at each end, of light draught of water, and destined to be propelled by a paddle or paddles held in the hand without fixed support. There are three main types.

(1) The *open*, *Canadian*, or *undecked* canoe, used for paddling purposes only, and accommodating any number up to ten or more. The native boats are mostly of *birch bark*, but those of the same pattern imported into England are usually of *bass wood*. They are all built with a smooth skin, *i.e.*, the planks do not overlap one another, but are put side by side and caulked or ribboned.

(2) The *Rob Roy*, called after the pseudonym of Mr. John Macgregor, the father of modern canoeing. This is a decked canoe, generally built of oak or cedar, for one or two persons, and able to carry a small sail, but chief reliance is placed upon the paddle. The average length of this type is 14 feet by 26 inches wide. It is always clincher-built.

(3) The Nautilus type and the developments from it. A larger *Rob Roy*, designed by Mr. Baden Powell, with a view to improve the sailing powers and quality of the craft. Like the *Rob Roy* it is generally clincher-built, but the larger sailing canoes are now built with smooth skins, and approach very closely in general character to the ordinary sailing boat.

Paper boats are extensively used in America, but have not been adopted generally in Europe, and canvas canoes are frequently built by amateurs, though seldom seen from boat-yards; the canvas canoe is, with suitable internal structure or frame, about the toughest for real rough work.

Carvel-built—A boat with flush, edge-to-edge planking.

Coaming or **Combing**—A thin plank on its edge fastened around the "well" (*q.v.*), to prevent the water on deck from running below.

Cock-pit—[*See* WELL].

Drip-cups—Leather cups set around the shaft of the paddle to catch the drippings from the blade.

Drawn by A. Thorburn

Lizars Edinburgh Engravers

Capercaillie

Dug-out—A boat consisting of a log with the interior dug-out or hollowed, the primitive form of the canoe.

Floor-boards—[*See* BURDENS].

Monkeying—Patching up or arranging hastily some fitting for a canoe (American slang).

Nautilus—[*See* CANOE.]

Paddle—A short kind of oar, held in the hand, and not resting in a rowlock, provided with one or two *blades* or *palms*. The usual length is about 8 feet and the width of the blade about 6 inches; they are usually made of pine or spruce, and consist of blade, round or shaft, and ferrule.

Palm—[*See* PADDLE].

Portage—(1) The carrying of a canoe round overland past an impassable bit of river or sea.

(2) The place of such carrying.

Rob-Roy—[*See* CANOE].

Round—The shaft of the paddle.

Stretcher—The board against which the feet are pressed to steady and enforce the stroke.

Well—The opening in a decked canoe to admit the putting in of cargo and to accommodate the crew.

N.B. For other technical terms, which are also used in rowing or sailing, see under those sports.

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CAPERCAILZIE [Cock o' the Woods; *Tetrao urogallus; Coq du bois*, Fr.; *Tiur*, Nor.; *Tjäder*, Sw.; *Auerhahn*, Ger.; *Gluhär*, Russ.]—This magnificent bird, the largest of the grouse-tribe, among English sportsmen termed shortly "the Caillie," is distributed over nearly the whole of Northern Europe wherever large forests of pine or fir exist, and over portions of Central Europe, where the same trees abound at a considerable elevation. Woodlands consisting solely of deciduous trees, however extensive, it never inhabits. But although common in parts of Germany, Austria, Switzerland, and elsewhere, the vast tracts of North-west Russia and the Scandinavian Peninsula may be regarded as its peculiar home.

In Scotland—Said to be indigenous in Scotland, it there became extinct, until early in the present century the then Marquis of Breadalbane re-established the Scandinavian breed in the woods of Taymouth Castle, whence it has spread over various parts of the country similarly suited to its habits.

Favourite Haunts—Its favourite haunts are ranges of pine forest broken by rocky ravines and low cliffs, with open tracks of mossy swamp, coarse herbage, and frugiferous shrubs, whither it can resort for food at early morn and before dusk. It is also partial to wandering on the borders of forest clearings, and makes such habitual use of cattle-paths and other rough woodland tracks as to be easily trapped. Great numbers of frozen Capercailzie are exported during the winter from Russia and Scandinavia. At that season, when the snow lies deep, it feeds on the shoots of the pine until its flesh becomes unpleasantly impregnated with turpentine, but in Northern countries affording abundance of wild forest fruit, bilberries, cow- and bear-berries, cranberries, and the like, the young birds are, in the autumn, delicious eating, and the old ones at least well-flavoured and free from taint. The richly sombre plumage of the cock Capercailzie, its defiant head and eye, strong beak and marked beard, all suggestive of its notorious pugnacity, render it one of the most strikingly handsome and game-like of birds, and its great size and weight make it one of the noblest feathered prizes that the sportsman can secure. It is the stag royal of the winged race.

Driving—In Scotland and most Caillie-producing countries it is often customary to drive the birds over the guns, and the ease with which driven Caillie may be killed is by no means proportionate to their conspicuousness as a mark. To a novice, at least, their flight is most deceptive, inasmuch as they appear, from their bulk, to be moving but slowly, whereas they are, in fact, travelling at a great pace. Many sportsmen, however, will derive greater satisfaction from bagging the giant grouse under conditions less artificial and demanding more individual patience and woodcraft. There are,

indeed, few wild creatures more wary than a truly patriarchal cock Capercailzie; he can on occasion run like a hare, and even when taking wing within distance, either from the ground or the branch of a tree, has an instinctive knack of interposing obstacles between himself and the gun. His pursuer, whether searching the pine-clad ravine, the depth of the forest, or the borders of the morass, cannot be too cautious or noiseless. Elk-dogs of the smaller breed are in Scandinavia occasionally trained to work up to Capercailzie in a leash, a deadly method of approach.

The Hen [*Rör*, Nor.; *Tjäder-höne*, Sw.]—The hen Caillie, also of noble size, but often wholly out of proportion to her gigantic and polygamous mate, is a careful mother, keeping the young brood together at the commencement of the shooting season, and exhibiting, like the grayhen, much noisy, self-exposing anxiety when danger threatens.

In favourable localities, as when the brood has run down into a willow-swamp to feed, the young cocks will lie well, and may be killed over a steady dog. A hard-hit Caillie will, after a considerable flight, possibly out of sight, almost invariably fling himself under the first, even inconspicuous, bank or ledge on either side of his course, and there die or lie still; he may, therefore, by observation of the flight and the ground, often be gathered without difficulty.

In the spring courting-season the cock Capercailzie's wariness is intermittently dominated by amorous ardour. Posting himself at daybreak on the branch of a selected tree, he thence utters his love-call to the hens, and during each brief repetition thereof becomes absolutely deaf and blind from passion. The watchful gunner has therefore as many correspondingly brief opportunities of approach, but must, when the call ceases, remain instantaneously rigid in his then position, for his intended victim suddenly regains his acute senses, and the slightest sound or motion proves fatal to the stalk. Devotees of this sport describe it as intensely exciting and fascinating, which is naturally a matter of taste. *Tetrao urogalloides* (*Rakkelhane*, Nor.) is the hybrid between the Blackcock and hen Capercailzie.

HENRY POTTINGER.

CAPERCAILZIE, STALKING — This is good sport in countries where the close time for belligerent gamebirds does not include the mating season. The amateur must, to start with, pass the night in the forest; and in Russia, where the sport in question is recognised, he will require the thickest of fur-lined coats and long, wadded boots. Proceeding to the forest in the dusk of an April evening, he must light a good fire and sleep from 9 p.m. until 2 a.m., or converse in hushed tones with the keeper or the village sportsman who is his guide. At the latter hour, or shortly after, he must quit his fireside and move quietly to that portion of the forest which is known as the tourney-ground of the capercailzie warriors. Presently he will hear, if all goes well, a curious and unfamiliar sound, *tok*, *tokka*, *tokka*, which will send the keeper's finger in warning to his lips; for during this first challenge he must remain still as death. Soon there falls upon his ear a second sound, a chirping as of some tiny finch, lasting but a few seconds and succeeded by a repetition of the first refrain. It is during the brief spell of chirping, that the sportsman may spring with impunity towards the tree upon the summit of which is seated the love-blinded capercailzie. Should the bird, after issuing the first half of its challenge, stop short without proceeding to the chirping, the stalker must stop short also, no matter how uncomfortable the position in which he may have remained after his last rush.

Thus, by a series of scrambles and wild leaps, he arrives presently within shot, and may, with care, shoot half-a-dozen capercailzies in the same manner, before sunrise puts an end to the sport.

FRED WHISHAW.

CARIBOU — Owing to the inaccessible nature of its haunts, the life history of the Caribou is involved in some obscurity, and it is not quite certain whether there are two species, the Woodland and the Barren Ground, (C. tarandus and C. tarandus arcticus), or whether they are not both merely varieties of the European and Asiatic Reindeer. The forms certainly seem to intergrade, so as to make it difficult to draw any specific line; but the extreme varieties have very different habits.

The **Barren Ground Caribou** wanders far beyond the Arctic Circle, into those desolate regions which it shares with the Musk Ox, and it indulges in very curious and extensive migrations in the spring and fall; these migrations being in some respects different for the two sexes. When migrating, the herds assemble in enormous numbers, as the Bison used of old on the great plains of the West, and the Spring Buck in South Africa. In fact, this is the only American mammal which can still, at certain times and places, be found in the same incredible numbers as of old; for it is protected, as Bison, Elk, Deer, and Antelope are not, by the remoteness and frozen desolation of the wastes where it dwells.

The **Woodland Caribou**, on the other hand, is a beast of the dense Northern forests; in most localities it does not possess any very marked habit of annual migration, though at all times a restless, wandering beast; and it is usually found in small parties, and never in immense herds. The Woodland Caribou is found here and there in the forests of Canada, from the Atlantic to the Pacific, and in two or three places penetrates across the border of the

United States. Like all other large game, it retreats before man, but nevertheless it holds its own against him better than most of its congeners. Caribou are more plentiful in Maine at present than they were thirty years ago. They have one very great advantage in the struggle for life over their giant cousin, the Moose, who so often dwells in the same forest with them. The Moose's long legs and vast power enable him in winter to go through snows where an ordinary deer flounders helplessly; but, when the snows are very deep and a crust forms, he can be run down and killed, with no difficulty beyond the severe toil involved, by any hardy man who is an expert snow-shoer. In many localities, in consequence, the settlers

CARIBOU.

have completely killed out the Moose by this villainous habit of "crusting." The Caribou, however, is not, like the Moose, forced to plunge his legs through the snow to hard ground; he possesses huge splay hoofs and very limber joints, so that he himself has snow-shoes, as it were, and only under very peculiar conditions of crust is it possible for any man to get near him. When plunging at a gallop through the snow, the tracks he makes are not unlike those of a gigantic Rabbit; for the limber hind legs take his weight almost up to the hock. I have seen a Caribou run right away from a party of expert snow-shoers without showing any distress, though in snow where a Moose would have been overtaken in half a mile. This capacity tells immensely in his favour, and more than offsets the fact that under ordinary circumstances he is less wary and more stupid than the Moose.

The best time for hunting the Caribou is when there has been a light fall of snow, and he can be tracked while the footfall of the still-hunter is muffled. But in good ground he is not a very difficult beast to kill earlier in the season. He is very fond of lurking about the barrens and cranberry bogs which dot the Northern forests, and, if the hunter can see him here, there is always a good chance to creep up on him. In thick timber, where the trees are close together and there is much brush, with crisp, dry leaves on the ground, it is exceedingly difficult for anyone but an Indian to get up to the Caribou, or indeed any other kind of game. In open forests of large conifers, however, I have found it easy to track and still-hunt Caribou, whether they were feeding or lying down. If one is close on the game, they will often be so panic-struck by the first shot that it is an easy matter to kill several if there is need of the meat. I have had a young bull, whose companion I had just shot, stand looking at me fully half a minute in paralysed terror before it made up its mind to run off unmolested, as I did not want to kill it.

The sight of a Caribou seems scarcely as quick as that of the ordinary Deer, nor are its other senses so sharp, though like all game it has a good nose. It is not so wary as the Moose; but I may remark in passing that my own experience has been that under like conditions the common American or White Tail Deer is the most difficult game on the continent to circumvent; doubtless it is for this reason that it holds its own in the land better than other beasts of the chase.

Caribou are great swimmers, and it is a very common thing to kill them in the water. Of course, however, no man would kill game swimming for sport, although, when exploring and travelling in the wilderness, any man must kill the animals he needs for food, just as he happens to come upon them. It must be remembered that the wilderness hunter, the man who roams through far-off wilds in chase of big game, cannot afford to give law to the beasts of the chase, as can his brother of civilized regions, who does not depend for his dinner, and perhaps for his life, upon the result of a single shot. Where parties of sportsmen merely take a three weeks' trip into the woods for Caribou, they of course kill only the bulls, and these only in legitimate fashion; but a man who travels for three months without seeing a single white face, or who spends his winter alone 500 miles from the nearest human habitation, cannot afford to take chances. If he finds a favourite pass in a lake, across which Caribou swim, he will kill them at this pass; and if, during the time of short rations in midwinter, the conditions of the snow enable him to run up to a herd on snow-shoes, he takes all possible advantage of the opportunity. [*See also* REINDEER.]

THEODORE ROOSEVELT.

CARP (*Cyprinus carpio*)—[*See* ANGLING COARSE FISH.)]

MEASUREMENTS, &C.—Length of head 4 to $4\frac{3}{4}$, of caudal fin $5\frac{3}{4}$ to 6, height of body 3 to $4\frac{1}{2}$ in the total length. *Eyes*—small, situated a little before the middle of the length of the head. $2\frac{1}{2}$ diameters from the end of the snout, and 3 apart (in an example nearly 17 inches long). Opercle strongly striated. The proportions of the various parts of the fish are exceedingly diverse, dependent upon age, sex, and locality. *Barbels*—of moderate length, those at the maxilla the longest, and almost equalling one diameter of the orbit. Lips thick and leathery. The maxilla reaches to beneath the front edge of the orbit. *Fins*—dorsal commences rather nearer to the snout than to the base of the caudal, its first two or three, or rarely four rays are bony, the last being serrated posteriorly, while the anterior portion of the fin, which is the highest, equals about two-fifths of the height of the body below it. Pectoral situated low down, its length equals about that of the head without the snout, and it does not extend to above the ventral, which latter reaches half-way to the anal. First two or three anal rays osseous, the last being serrated posteriorly. Caudal deeply forked. *Scales*—large, $5\frac{1}{2}$ to 6 rows between the lateral line and the base of the ventral fin. *Colours*—vary, usually brownish or with a bluish tinge along the back, with golden or coppery reflections along the sides. Some have been described of a whitish tint due, perhaps to age, others as having black spots caused, perhaps occasionally, by parasites. Day, *Fishes of Great Britain and Ireland*, vol. ii. p. 158.

CATAPULT SHOOTING—Ever since the Romans used it as their great engine of war, a series of weapons of greater accuracy and greater shock have gradually ousted the Catapult from its first stage of importance, until it has degenerated to the mere plaything of schoolboys.

In the big schools of England, France, Germany, and America, the Catapult is still as popular as it was with our grandfathers. For the most part, a coarse inaccurate weapon, used in hurling small stones, and combining economy and inaccuracy, is in favour.

In a large public school, probably twenty per cent. of the boys have at one time or another used catapults; and though probably only two or three ever really master the science, yet the little weapon is, when properly made and used, and taking into consideration the rough materials of its construction, capable of a wonderful degree of accuracy.

If the history of many of the very best sportsmen and shots could be written, it would be found that the foundations of their skill with gun or rifle were laid in early days by the use of this insignificant weapon. To youths who have not yet attained to the use of large weapons, there is no finer training for judging distances on a small scale than shooting with the "tweeker," the small Catapult to which I shall presently allude. Every shot fired can be seen by the shooter to the top of its parabolic curve, and even when it has begun to drop.

What, it may be asked, has the Catapult got to do with the sportsman who has arrived at years of maturity? And of what practical use is it? None, certainly, to any one who only *begins* to shoot with it in days when the muscles of the arm have become rigid, for there is a certain knack about its use not to be acquired in after years. But to the big-game shooter who may find himself in some out-of-the-way corner of the earth, such as Western America, Newfoundland, Iceland, Spitzbergen, and other places, where the various species of grouse and ptarmigan are plentiful and *tame*, it is of every use. There is not a big-game hunter in search of large animals, who has not, at some time and in such a country, been confronted with the difficulty of supplying his pot with fresh meat without having to bang off his gun or rifle at the risk of disturbing the whole neighbourhood and his particular quarry. A man who knows how to use a Catapult, even though he may not be a first-class shot with it, will find the little weapon of immense help under such circumstances. The various species of grouse, particularly the blue Rocky Mountain grouse (*Dendragapus obscurus*), will, with care, readily allow a man to approach to within eight or ten yards, a distance at which, after a few shots, the catapulter ought easily to be able to strike a blow effectively in either the head or neck. It is not difficult to avoid striking the bird in the body, as the necessary elevation can quickly be obtained against the clear sky. Every shot can be seen, and the shooting is practically noiseless, so that it does not disturb the birds, who only raise their necks and look about, even when a pellet may have touched the feathers in their neck. During a trip to the Rocky Mountains in 1886, I found the blue grouse very plentiful in the Big Horn Mountains, and could generally manage to supply the pot for the day when bigger game was scarce. For this purpose I used elastic about $\frac{1}{8}$ inch in thickness, which is nearly double that of "tweeker" calibre, and gives a greater shock without perhaps the same degree of accuracy.

Materials—Catapults are like rifles in one respect: the thinner the elastic, or the smaller the bore, as one would say, the greater the accuracy. But then, again, range is curtailed by too thin an elastic. Although not giving sufficient shock to kill outright so large a bird as a grouse, the best elastic for all-round use, combining accuracy and shock, is a $\frac{1}{16}$ inch thick, and used in lengths of 9 inches, with a single No. 1 shot, dog-skin pouch, and fork of privet, which should be peeled, dried, and hardened in the smoke of a candle. With such a weapon properly made, it is not difficult for an expert to put ten pellets in a three-inch circle at ten yards. Nearly the whole art of shooting properly with so delicate a weapon is to get the force required. This can only be done by the shooter finding out for himself exactly how to give the pull back of the left hand, holding the

shot in the pouch, and letting go as the *right* hand gives the forward jerk to the fork. But no man can be taught to shoot with a Catapult, or any other weapon, by means of a book, though certain hints may be of use, and accuracy is obtained only by constant practice.

The elastic should never be used cold as it is bought. The best plan is to carry it in the breeches pocket two days before using, or steam it for an hour or two in hot water to make it soft and pliable. The writer knows of one boy who was so devoted to his sport, that he always carried a strand or two of the elastic in his mouth, ready for immediate use.

J. G. Millais.

CHAMOIS (*Rupicapra tragus*)—Chamois stalking is with the Austrians what fox-hunting is in England. It is the favourite sport of the Austrian Kaiser, and of all who can indulge in it. But the number who follow the Alpine goat is small compared to the number who follow the stag, partly on account of the expense incurred, and partly on account of the dangerous and fatiguing nature of the work. The first question the huntsman asks the stranger is whether he is *schwindlig* (giddy). If the latter can fearlessly answer in the negative, and proves on his first essay that he is possessed of the necessary nerve in negotiating dangerous places, the *Jäger* is satisfied and—beyond giving a hand in places where only a son of the Alps could manage to progress at all—will confine his attention to the game.

The chamois is hunted by the *Birsch* method, or stalked, both in summer and winter. In the warm weather he keeps to the highest summits of the Alps, but the deep snow brings him down almost to the valleys in search of food, and those who can stand the cold and the fatigue prefer to stalk him in winter. When the snow is very deep, however, stalking is out of the question, and one is reduced to driving.

Habits—He is a very peculiar animal in his movements. The stag will hurry from place to place, only stopping to feed, and thus traverse miles in a day and night; but the chamois will often remain feeding for days together in an area as confined as that of an ordinary dwelling-house. Yet it must not be supposed that he remains quiescent. On the contrary, he is never still for a minute together, but is continually imbued with an unconquerable restlessness that prompts him to take little quick jumps between almost every nibble at the herbage. He is ever on the alert for a foe, and this wariness makes stalking very difficult. His scent is keener than that of the stag, which again enhances the difficulty. In the deepest snow, with a wild wind raging, the chamois will spring unhesitatingly at the face of an apparently perpendicular wall of rock. He makes for the patches of snow visible on the face of the rock, for either instinct or experience has taught him that where there is room for snow to catch he can find footing.

Local Knowledge, &c.—There is no sport that requires such perfect and unerring local knowledge as chamois stalking. In many places during one day a sportsman's life is absolutely in the hands of the *Jäger* who conducts him. The *Jäger* must know every inch of the track, for one false step may mean almost instantaneous death. Consequently, only picked men of undoubted local knowledge are chosen, generally those who have served a long apprenticeship as beaters or drivers. I may here mention, as it is not generally known, that the

Chamois.

Jäger is a servant of the State, for, although paid privately by the gentleman who employs him, he is bound to pass a qualifying examination, and take an oath, before his license is granted him. Moreover, there are regiments recruited from the ranks of these *Jäger*, similar to the *Chasseurs* of France.

Buck and "Geiss"—One of the principal difficulties in chamois shooting is to distinguish between the buck and the *Geiss*, or female. The general contour of their form is alike; they are much the same size, and the horns are very similar in male and female. The only, or at least, the main difference, is that in the buck the horns are wider apart at the tips and thicker at the base than in the female. In the *Jägersprache*, or hunting slang, which is very elaborate in that country, the word *Geiss* has come to be applied

only to a female without young, although it really only means "goat."

Clothing—The sportsmen and *Jäger* wear short breeches made of the skin of the chamois, preferable to cloth or leather, for the former gets wet and the latter is generally too stiff to be manageable. The *Jäger's* dress is very quaint, but very practical, which is everything. The breeches, as just mentioned, are of chamois skin, barely reaching to the knee, in order to leave the leg free for climbing, and prettily decorated with designs worked in thread of emerald green. In summer bright green stockings are worn, not quite as high as the knee: but in winter many pairs of long thick stockings are worn right up to the thigh. The coat is of dark green cloth, with many pockets, and buttons of horn. The more pockets one has when chamois stalking, and the more one manages to get into them, the better one is satisfied. Thick, heavily-shod mountain boots, and a hat decorated with trophies of the chase, generally the feathers of the capercailzie, or a chamois "beard," complete the costume.

This chamois "beard" as it is called, is *the* trophy of the chamois chase. The name is given to the hair which grows along the spine, and which is exceedingly long and handsome. In winter it is a rich dark brown colour, tipped with silver-grey points, but in summer it turns to a greyish tint. The huntsmen pull it out most carefully, and arrange it in the shape of a plume, binding the root ends very firmly together with a green thread. This plume is worn in the hat, generally fixed with a silver brooch stamped with the figure of a chamois. The task of picking, arranging, and binding the hairs, is a slow and tedious one, and makes these trophies very valuable. Between three and four pounds sterling, or their equivalent, are given for a fair trophy of this description, and considerably more if the specimen be a really fine one. In addition to this trophy, the *Jäger* generally extracts the two front teeth, called the *Grandl*, and these are worn in scarf-pins. It is no uncommon sight to see a *Jäger*, or even a peasant landholder, wearing as trophies all that remains of several stags, chamois, and *Auerhahn*, or capercailzie.

On account of the glaciers to be crossed, slippery rocks to be traversed, and similar obstacles, the huntsman must have his feet shod with climbing irons, bound firmly to the foot with stout leathern thongs, and furnished with sharp spikes to grip the ice or rock. He also carries a *Bergstock*, or mountain stick, a long pole with a spike at the end, which is really and truly as necessary in some places as the man's own legs.

Chamois Ground—To show that the chamois requires some room, I may mention that my chamois ground, by no means a very large one, covers an area equal to fifty English square miles. A little lumbering is done on the ground, and some of it is given over to peasant holdings, but the bulk of it is virgin Alp land, roamed over by the chamois, my *Jäger*, and poachers.

Poachers—These are very numerous, and form a powerfully antagonistic element to sport. Poaching as they do from sport and not from want, they are very hard to deal with, and as it is an easy matter for them to find out in what part of the country you will be shooting at a certain time, it is no uncommon thing for them to be enjoying themselves simultaneously at a conveniently remote distance. They do not even stop at human bloodshed when pursuing their illegal sport, but will open fire on the *Jäger* if molested, and many are the reports that come in from the more remote and lawless districts of *Jäger* being tortured or murdered whilst endeavouring to do their duty. On one of the last occasions that I was out stalking, we heard rifle shots not very far from our position, in consequence of which my *Jäger* had to leave me and go and prospect. He was away that day and night, returning next day at noon, but could discover nothing.

Dangers of the Sport—One of the greatest dangers encountered in chamois stalking arises from the frequency and suddenness of the *Lawine*, or whirlwind, accompanied generally by an avalanche of snow, which will come upon the huntsman suddenly and without warning in deep gorges of the Alps, roaring down the mountain side with terrific force, or catching him as he breasts some steep bluff. Such is the force of the wind, accompanied by blinding snow, that the sportsmen are often in danger of being whirled bodily away by the strength of it, and from generations of experience and sad fatalities have learnt to throw themselves face downwards on the ground when it is heard approaching.

A day's sport—To give an idea of what a day's chamois stalking means I will briefly describe a day on one of my last outings.

We rose hours before the dawn on a December morning, with a world of snow around us such as is only seen in Alpine and Northern lands. Breakfast was the first consideration, and full justice we did to the meal. The very prospect of going through a fatiguing day's work in such cold induces one to eat, if only from motives of physical economy. Then, the *Jäger* having bound on our irons, and our *Buckel-sacks* loaded, we put on our strong leathern gauntlets, and, climbing pole in hand, followed our *Jäger* bearing the rifle slung at his back, and carrying a collapsible lantern to light the way till such time as it should brighten. The snow was half-way up our thighs even in the valley (if the gorge round our hut, three or four hours' march from the nearest hamlet, and high up among a chain of Alps, can be called a valley), and we speculated curiously as

to what it would be like higher up. Meanwhile, all we had to do was to tread in the *Jäger's* capacious footsteps, and take care not to slip or fall into some unseen cavity. Four hours' stiff climbing, during which our clothes were saturated with perspiration, brought us to a point that we could easily reach in one hour in summer. The lantern had long been extinguished and packed away, and a cold white glare hung over the peaks. We were now half way up one side of a vast gorge, scalloped out of the mountains by centuries of recurring winter snows and spring floods. On a perilous-looking bluff on the opposite slope, just below the line of the eternal snow, is a substantial hut of pine logs, reared by an adventurous Englishman who had come prospecting in the rugged gorges around for precious stones and, what is more, had found them.

The *Jäger* drew his long *Hirschfänger* ("stag-catcher") and proceeded to chop off some pine boughs with it for me to sit on. This knife is very powerful, with a heavy horn handle, and is carried bayonet-wise in a belt around the waist. It is used for despatching the game, gralloching, and pioneering through the undergrowth. He removed my climbing irons, produced from the depths of his haversack my felt overboots, and made my lower man comfortable. My air cushion was inflated, and having donned my thick fur coat, I sat and enjoyed a second breakfast, with the strongest of schnapps, a brand called *Slivovitz*, introduced from Turkey. It is really astonishing how much coarse fat and raw spirits a man can eat when chamois stalking.

Breakfast was nearly over when we sighted a herd of chamois at some considerable distance. I raked them with my glasses, and could make out several fine bucks, jumping every few seconds, as they fed, in their jerky, nervous manner. We packed up and started stalking, but it was no good. We could not get anywhere near them. Later on we sighted a solitary old buck with a fine pair of horns on the wrong side of a rather dangerous glacier. To reach it we must scale flight after flight of *escaliers* built of rough pine logs, and clamped to the face of the rock with iron. It is a beautiful but a terrible pathway. One looks down seemingly miles to the gorge below, and speculates on the results of a false step. In the crevices the Edelweiss blooms gaily, raising its little white star in emulation of the white around. We crossed the glacier, bending nearly double, feeling our way inch by inch, and taking care to get a good grip with our irons before making a single step. The chamois was feeding in a patch of cover near the farther edge. The wind suddenly changed, veering towards him. He became suspicious instantly, although he could see nothing, and came down towards us. While he paused after a run, as is the custom of the animal, I took aim, although he was nearly four hundred paces away, for I knew my only chance had come, as the path he was striking would take him further from me. Simultaneously with the report, and to my intense chagrin and mortification, he went down the slope, skirting the glacier as fast as he could.

We ascended the gorge above the glacier with dampened spirits, when suddenly around a bend came a herd of some fifteen or sixteen, bucking along in a straggling line. I fell upon my knees and waited. Fortunately the wind held good, and they came within range all unsuspecting. I singled out, as I thought, two fine bucks, and fired, succeeding in dropping both. The rest turned, sprang at the rocks and disappeared. On investigation one turned out to be a good buck, the other a very well-developed *Geiss*; but we were not undeceived regarding the latter till we had it in the skinning house. That night, according to hunting custom, the *Jäger* drank and smoked much, telling long yarns of the chase, and ending up with a dance to the strains of a guitar and a mouth-organ, dear to the hearts of all mountain people.

To show what skill a veteran *Jäger* can acquire I may mention that on one occasion his Majesty the Emperor shot twenty-seven chamois in one day, of which *nineteen* were bucks. To anybody who can appreciate the difficulty of distinction this constitutes a record. To the late Count Meran, son of the Archduke John, belonged the honour of having dropped two thousand.

In conclusion I can thoroughly recommend chamois stalking as a sport that brings out all the true qualities of a sportsman, and to any of my readers who may chance to embark on it I wish most heartily *Waidmannsheil!*

SCHLICK.

CHAMPIONSHIPS—This is a word which is frequently used, and also frequently abused, in connection with the various forms of sport which give scope for competition between individuals. We believe the word first came into vogue as a sporting term in the days of the Prize Ring, when a pugilist who had beaten all comers was styled the Champion of England, and held his title until he was beaten in a match arranged to test his claim to the honour, and thereupon the winner took over the title of Champion until he was beaten by a better or younger man. Thus for years there was a legitimate succession of Champions in the Prize Ring, and a record of succession is supposed to be kept by the sporting press up to this very day. A similar system was pursued with regard to professional Sculling, there being a lineal succession of Champion Scullers of England, until Sadler was beaten by Trickett the Australian, since when the struggles go on for what is termed the Sculling Championship of the World.

In modern times, since various forms of Athletic Sport have been organised, it has been

customary for the Governing Bodies of each amateur sport to hold an annual meeting, and to award to the winner of each event at that meeting the title of Amateur Champion for that year. A list of the chief amateur bodies who are recognised as being legitimately entitled by common consent to award such a title is given below. It would be impossible to give an exhaustive list, as there is nothing but public opinion to judge of the right of any body to claim to control any sport.

In addition, the title of Championship is used in Cricket, Football, and other games which do not lend themselves to individual competition, but only to competitions between County or Club Teams: and there are scores of competitions in different places, which are said to be for the Championship of the County, or of the District, or even of a particular club. Of the making of so-called champions there is nowadays no end.

Athletics—The Amateur Athletic Association holds an annual Championship meeting in London, the Midlands, and the North in rotation.

Boxing—The Amateur Boxing Association holds a similar meeting every year.

Cricket—The governing body is the M.C.C. The only Championship recognised is the County Championship, which is the prize of the County which is most successful during the year. Amongst cricketers "the Champion" means Dr. W. G. Grace, a title which none can question.

Cycling—Annual Championships at various distances are held by the National Cyclists' Union.

Football—The Football Association holds an annual competition for the Cup, the clubs playing against each other in pairs, in a succession of rounds, until two are left in who compete in the final tie for the Cup. This is practically the Championship for the year, although the term Championship is not used. The Cup is open to both professional and amateur teams. There is also a similar competition for the Amateur Cup, which is confined to amateur players.

The Rugby Union supervises an annual County Championship.

Golf—There is an Amateur Championship, also a Professional Championship and an Open Championship (for both "pros" and amateurs) held at different places under the joint management of several leading clubs.

Lawn Tennis—There is an annual meeting at the grounds of the All England Lawn Tennis Club at Wimbledon, under the management of the Lawn Tennis Association.

Rowing—The Amateur Rowing Association hold no Championship, but the title of amateur Champion of the Thames is recognised as belonging to the winner of the Wingfield Sculls. In other respects the winners of the four great races at Henley (Grand, Stewards, Goblets, and Diamonds) are practically in the same position as amateur Champions at other sports.

Skating—The National Skating Association supervises Skating Championships on the rare occasions when weather permits.

Swimming—The Amateur Swimming Association supervises Championship races held at different places and times during the season.

CHAR (from the Gaelic *ceara*—red or blood-coloured), *Salmo alpinus*, *S. salvelinus*, *S. willughbii*, *S. cambricus*, Welsh *torgoch*. This, the rarest of our non-migratory salmonidæ, has been very much subdivided by naturalists without sufficient cause. The chars which inhabit various waters in England and Wales, Ireland, and Scotland are all of the same species, slightly altered by the different surroundings under which each has lived. Those from Windermere and Coniston (Westmorland and Lancashire) are without doubt the finest in the British Isles, not only in size, but in flavour. When transferred from these larger lakes to smaller sheets of water, such as Hawes Water and Goats Water, the char have changed in outward appearance very much. In these latter places they fail to find the

CHAR.

same food, larvæ, water beetles, &c., upon which they thrive in what may be called the parent waters; they therefore degenerate in size, and rise more or less freely to the fly, both natural and artificial. In such places it is to the char of Windermere just about what the brown and yellow tiny burn trout is to the lusty trout of larger rivers and lakes. Notwithstanding what has been said to the contrary and its nomenclature, "*alpinus*," it is indigenous to this country, and there is no proof of its naturalisation with us. As a sporting fish it does not rank high, rising most freely to the fly in the smaller lakes. In those of Cumberland, Westmorland and Lancashire, where it is found in greatest abundance, it is mostly taken by nets, which are drawn in deep waters on to the shallows. It is also commonly caught by means of "plumb lines," which were invented in order that the artificial baits—spoons or pieces of metal, bright on one side, coloured on the other, cut out in the shape of a fish—used on them, might be spun steadily at varying depths. Two lines are used from each boat, one on each side, and each line has from four to six baits on it. To keep them down, a sinker of about 1½ lb. weight is used, so

adjusted that it will not spin round and entangle the line. Each line is fastened to a somewhat stiff rod of about ten or eleven feet long, which is fixed upright in the boat, and to which a bell is attached. When a bait is struck the "tinkle-tinkle" warns the fisherman, who is slowly plying his oars, of the fact. In the English lakes—Windermere, Coniston, Derwentwater, &c.—char are caught in a similar manner, and are seldom nowadays taken with fly or worm. In Llanberis Lake they have occasionally been taken in large quantities with the worm at night. In the Irish lakes, Loughs Conn and Inagh to wit, char are occasionally taken with fly when trout fishing. They used to be so taken on Ulleswater (Westmorland), on Loch Leven, and on Lough Neagh, but from all these places they appear to have disappeared, no doubt exterminated by pike, by destruction during spawning time, and by pollutions. Char vary in weight from six to the pound to a pound and a half each, although fish over 2 lb. have occasionally been caught in this country. An ordinary trout fly, rather bright in colour, will take it best, but the char is an uncertain riser. Some time ago a gentleman was trout fishing in Loch Lubnaig, in Perthshire, and saw a number of fish rising in a curious way close to the bank. He threw over them, and in a short time caught, mostly with a teal and red body, a dozen fish, which he failed to recognise. They were char, and the natives had not known one taken with fly for many years previously. In Lapland and Norway the char grows to a larger size than with us, 2 lb. and 3 lb. fish not being rare, and they take fly freely. It is also more or less plentiful in European rivers and most of the European lakes, especially such as are situate at a high altitude. It is found in America and in Canada.

The char spawns at the same periods as trout, sometimes on the shores of the lakes, sometimes in the adjoining streams. It comes under the same law as trout as to close season. Where a license is required its cost is usually *2s. 6d.*; the charge for a "plumb line" license is *5s.* The char may not be taken in Windermere and Coniston between October 2nd and March 31st. In Scotland there is no close time. In Ireland it is from November 1st to January 31st. During the season char is considered a great dainty, and "potted char" is one of the luxuries to be obtained at the English Lakes. The char, owing to its delicacy, is not a useful fish for the pisciculturist, and seldom becomes thoroughly acclimatised in waters where it has been artificially introduced.

R. B. Lee.

Measurements, etc.—Length of head $4\frac{3}{4}$ to $5\frac{1}{4}$, of caudal fin 6 to $6\frac{1}{2}$, height of body $4\frac{1}{2}$ to $5\frac{1}{2}$ in total length. *Eyes*—size depends much upon age, sex, and locality from whence procured: usually situated just in front of the middle of the length of the head, from $1\frac{1}{4}$ to 2 diameters from the end of the snout and the same distance apart. In some the comparative height of the body is much greater than in others, and dependent on food, health and the breeding season, the kelts becoming emaciated. The maxilla in some extends to beneath the last third of the orbit, in others to beyond the vertical from its hind margin, while it is likewise slightly more strongly developed in some than in others. The lower jaw in some varieties, as in the torgoch of Wales, may be longer anteriorly than the upper jaw. The opercular pieces are of as diverse shape in the char as the trout, and frequently are dissimilar in the opposite sides of the head. *Teeth*—present in the jaws and in a line across the vomer near its anterior extremity, and opposite the teeth of the palatine arch, none along the body of the vomer. *Fins*—dorsal usually commences about midway between the end of the snout and the base of the caudal fin, in some examples a little nearer the snout. The pectoral and other fins are of varying lengths according to locality, sex, and other varying conditions. *Scales*—small, and a much larger number of rows descending from the back of the lateral-line than there are of pierced rows along its whole extent. *Cæcal appendages*—these vary considerably, in Loch Inch 38 (Thompson): L. Rannoch 28: the Lakes 28 to 44, Dr Günther detected from 36 to 52, and the smallest number in those from Windermere, 36. From the same locality I possess an example with 28. They are as inconsistent as in the trout.

Colours—These again vary, but as a general rule the belly, prior to spawning, becomes of a crimson or claret colour, while there are generally some light-coloured orange or black spots on the body and head. The front edge of the dorsal, ventral and caudal as well as the upper edge of the pectoral are often of a pure white or orange colour. The variation in tints and shades is not so great as in the trout. In some, the ventral, anal, lower portion of the pectoral and hind edge of the caudal partake of the scarlet colour of the abdomen.—Day's *Fishes of Great Britain and Ireland*, vol. ii., p. 114.

CHEETAH (*Cynælurus jubatus*, Hindustani, *Chita*). The Cheetah, or Hunting Leopard, is a member of the great Cat-family (*Felidæ*), allied to the common Leopard, but differing from it in so many essential points that it is now regarded as generically distinct. It stands higher on its legs than an ordinary Leopard, and has relatively a more slender body and a longer tail; ears short and rounded; the face shorter and the crown more elevated than in the Leopard. The upper flesh-tooth is without the cusp on the inner side which is characteristic of the true cats, while the claws are shorter and only partially retractile.

The length of an adult Cheetah is about 7 ft., including the tail, which measures about $2\frac{1}{2}$ ft. The height at the shoulder will vary from 2 ft. 5 in. to 2 ft. 7 in.

The Cheetah occurs throughout Africa and South-Western Asia from Persia to the countries east of the Caspian, but not further east than India, where it is most common in Jeypur and Hyderabad. It has not been met with north of the Ganges nor in Ceylon.

Its usual haunts are the low rocky hills bordering the plains on which are found the Antelopes which form its chief prey; although, like the Caracal or Desert Lynx, it will likewise capture hares and game birds.

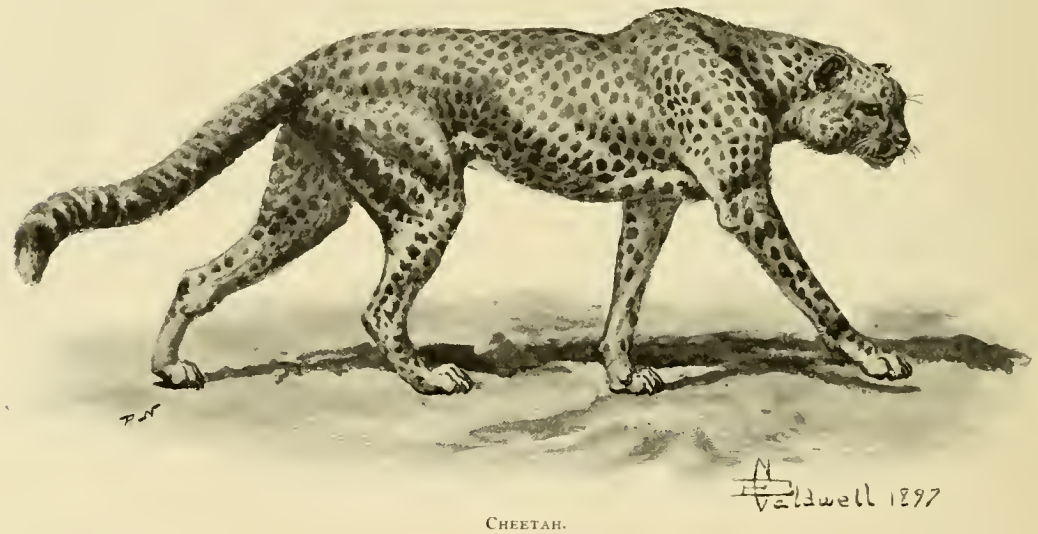
The employment of this animal for the chase seems to have been known in the East from a

very early period. It is figured on Assyrian bas-reliefs in the act of seizing an Antelope, and is represented also on Egyptian monuments about 1700 B.C. Amongst the animals brought in by way of tribute to the Kings of Thebes by the black tribes of the Upper Nile is a Cheetah led in a slip with a very ornamental collar.

We learn from Baron de Noirmont that both Charles VIII. and Louis XII. of France kept trained animals of this kind, with which they killed hares and roedeer. After a kill, the Cheetah, on being shown a little blood in a tin bowl, would leave its prey and jump on the horse's crupper behind its master. One would imagine that the horse would require as much training as the Cheetah to stand quiet under such very trying circumstances. Francis I., who ascended the throne of France in 1515, also had his Hunting Leopards which, according to Gesner (*Hist. Anim.*), were of two kinds. From his description the smaller kind must have been a Lynx. They must have been very docile, for, he says, the keeper scarcely mounted his horse before the beast jumped up after him, and seated itself on a cushion behind the saddle. Henri II., the successor of Francis I., in 1547 continued this kind of sport, and it appears to have been patronised at the French Court until the days of Henri IV., when the last trained Leopards seen in France were those brought by Marie de Medici from Florence in 1601. After that date, says Baron de Noirmont, they were no longer to be seen either in France or Italy, although in Germany the sport was revived by Leopold I., who died in 1705.

There is no record of the successful use of the Hunting Leopard in England. Even James I., great sportsman as he was, drew the line there. But an experiment was once made in this direction by the Duke of Cumberland, brother of George IV., with one of two Cheetahs belonging to Tippoo Sahib, which were brought to Windsor in 1799. The Duke made a large inclosure in the park with strong netting 15 ft. high, into which he turned a stag from Windsor forest. The Cheetah was then brought in by two Indian attendants and unhooded. The stag showed fight, lowering his horns; and the Cheetah, disliking the look of his opponent, bounded over the nets, and, dashing through the terrified crowd of spectators, pursued and killed a fallow deer at no great distance; and so ended what was probably the first and last attempt at hunting with the Cheetah in this country.

The sport as practised in India at the present day is conducted somewhat as follows:—The Cheetah, hooded like a falcon, and held by a stout collar and cord, is carried to the field on a bullock cart, on which he sits side by side with the native keeper who has charge of him, and who pats and caresses him from time to time. The cart proceeds across country, until deer or antelope are seen. The driver then advances circuitously, gradually narrowing his circle until he gets within one or two hundred yards of the nearest antelope, which, accustomed to see the native carts of the country, does not at first take much notice of that which carries the Cheetah. As soon as he is near enough, the driver stops, and the keeper removes the hood of the Cheetah, which springs lightly from the cart, and commences his stalk, availing himself of every bush and hillock between himself and his prey as he stealthily approaches it. When within forty or fifty yards he jumps up, and in a series of magnificent bounds dashes at the nearest antelope, and generally brings it down.



CHEETAH.

Av. ht. at shoulder, 2 ft. 7 in. Av. length from head to root of tail, 4 ft. 6 in.

fastening at once upon its throat and killing it. It sometimes happens, however, that the intended victim gets too good a start, and the Cheetah, failing to overtake it within a reasonable distance, gives up the chase and returns sulkily to his keeper, who feeds and re-hoods him. In the event of a kill, the keeper runs up with a tin bowl, and, cutting the deer's throat, fills the bowl with the blood, which he allows the Cheetah to lap up, until, watching a favourable opportunity, he slips on the hood, and leads the animal back to the cart. The sportsmen who go out on these occasions are either mounted on horseback, or go in pairs, in bullock carts like that which carries the Cheetah.

 J. E. HARTING.

CHEETAH, AFRICAN The African Cheetah (*Felis jubata*), Leñau of the Bechuanas, Luipaard of the Boers, is a shy, nocturnal beast, which seldom falls to the rifle of the white sportsman. It figures very rarely indeed in the records of English hunters in South Africa. Many Europeans spend years in the country without setting eyes on this animal. Yet, from the Cape Colony northwards, the Cheetah is not an altogether uncommon beast of prey. In Bechuanaland the natives snare annually a considerable number of these animals, and hunt them with dogs. Karosses or rugs made from the handsome skins of the Leñau are well known at the up-country stores, where they are taken in barter. The Cheetah is nothing like so dangerous a beast to tackle as the leopard, and is killed even by the natives with their knob-kerries, or club-sticks. The African Cheetah much resembles its Asiatic congener. It stands high upon the leg, and has the dog-like foot and non-retractile claws, which distinguish it at once from the true leopard. Its high skull, somewhat woolly fur, a slight mane, and the differences in marking, which may at once be noted on comparing its skin with that of the leopard, serve further to accentuate the dissimilarity between the two animals.

It feeds on the smaller antelopes, hares, game birds, and occasionally sheep and goats, and is extremely devoted to the springbuck, of which it kills a good many. A peculiar local variety of Cheetah (*Felis lanea*), known to naturalists as the Woolly Cheetah, has been found in the Karroo district of Cape Colony, in the neighbourhood of Beaufort West. In this variety—an example of which was formerly exhibited in the Zoological Gardens—the fur is extremely dense, and the markings are tawny instead of black.

H. A. BRYDEN.

CHEETUL OR **CHEETAL** (*Cervus axis*), commonly known as the Spotted Deer of India. It much resembles the Fallow Deer of Europe, except as regards its horns, which are never palmated like those of the Fallow. Its colour, too, a light reddish brown, is darker, and the white spots along its back and sides are more distinctly defined. The stag has three distinct points on each gracefully curved horn, often with one or two short snags just above the brow antler. The ordinary length of horn is about 30 inches, and the circumference of beam about 3½ inches, but the writer has shot a Cheetul with horns over 36 inches, and as they were in velvet and their points quite soft, they would probably have grown an inch or two longer. The span within the bend was 30 inches, but such width is exceptional. In height the Cheetul

CHEETUL.

Ht. at shoulder, 32 *in.* *Av. horn measurement*, 30 *in.*
Max. horn measurement, 38¾ *in.*

stands from about 30 to 34 inches, its size varying in different localities.

Habitat—It is usually abundant in large tracts of dense forest, interspersed with glades of high grass, where water is fairly plentiful (such as the Terai, for instance), or on the extremities of the forest-clad spurs of the Himalayas, which run down into that tract. It is very common in the Dehra Dún Valley, and on the Sewalik range of low-wooded hills which flank it on the west. In fact it is more or less common in almost all the level or low-hilled jungles it affects, from the foot of the Himalayas to Cape Comorin, and even to Ceylon, but never where deep shade, long grass, and water are absent.

Characteristics—In habits the Cheetul is timid and shy, and it seldom, if ever, attempts to show fight, even if approached when wounded. Yet it may frequently be found quite close to small hamlets where patches of ground in heavy jungles have been cleared for cultivation, especially when the cereals are young and green. Its cry of alarm, a short high-pitched sort of bark, is more often heard at night when the animal is alarmed by some prowling beast of prey. Where its haunts are in more or less level localities it is almost invariably shot from elephant back, but the most sportsmanlike way of hunting it is, where possible, to follow it on foot in broken or low-hilly ground.

Cheetul sometimes congregate in large numbers, but they are mostly found in herds of from five or six to a dozen or more, and usually with a good stag or two in a herd.

A singular characteristic of this deer is the irregularity with which it sheds its horns. The writer has hunted Cheetul at many different times of year and found them with horns in every stage of growth. But the best time for hunting them is from December to March, when the jungles are most free from malaria and the heat is not too oppressive. Moreover, some of their favourite resorts are now strictly closed from April to October by the Government Forest Department.

Armament—A double express rifle of from ·450 to ·500 bore, carrying a projectile of *soft* lead about an inch long, hollowed to not more than half its length, the hollow plugged with a bit of wood, is about the most suitable implement for Cheetul-shooting. The cartridge should be loaded with the strongest charge of powder the rifle can stand. Many a wounded wild animal is lost in dense jungle from want of smashing power and a flat trajectory in the weapon used for shooting at it.

DONALD MACINTYRE.

CHUB (*Leuciscus cephalus*)—[*See* ANGLING (COARSE FISH)].

MEASUREMENTS, &c.—Length of head 4½ to 5, of caudal fin 5¼, height of body 4 in the total length. *Eye*—diameter of each 5½ to 6 times in the length of the head, 2 diameters from the end of the snout, and 3 to 4 apart. Snout obtuse. Mouth rather deep, the upper jaw slightly overlapping the lower, and the posterior extremity of the maxilla reaching to beneath the front edge of the eye. The hindermost bone of the suborbital ring the largest. *Teeth*—pharyngeal teeth pointed and hooked at their extremities (in some slightly denticulated), 5, 2-2, 5. *Fins*—the dorsal commences midway between the end of the snout and the base of the caudal fin, its height exceeds by one-third the extent of its base. Pectoral as long as the head excluding the snout. Ventral inserted on a line slightly anterior to the origin of the dorsal fin, its length equalling about half that of the head. *Lateral-line*—slightly concave, three rows between it and the base of the ventral fin. *Colours*—muddy bluish or greenish colour along the upper surface of the head and body, becoming lighter on the sides and beneath. Dorsal and caudal fins dusky or greenish and externally dark: ventrals and anal bluish white tinged with red. Cheeks dashed with red and gold. —Day, *Fishes of Great Britain and Ireland*, vol. ii., p. 179.

CLOSE SEASONS Angling, *see* FENCE MONTHS. Shooting, *see* GAME LAWS.

COACHING—Coaching may be divided into business and pleasure coaching. Under the former may be ranked those vehicles—they are sometimes large wagonnettes—which run to places of popular resort in connection with the trains, or between places which as yet have no railway connection, or, third, the coaches which are run for the benefit of tourists on a certain round tour, as in the Lake district, from Riggs Hotel and elsewhere. In the old days, all the coaches earned a great deal of money by the carriage of small parcels; but what with trains, sample, parcel, and book posts, few packages now find their way into the coach boot or into the way bill. As compared with those of former times—save when the opposition was so keen that a coach would carry people for nothing or "for any sum the public please," as an old Bristol coach bill put it, rather than they should travel by any rival concern—the present fares of a business coach are low, and consequently the expenses have to be cut down. The result is that the pace is often slow, the horses have to go long stages, and there is none of the spick and span appearance which characterised the coaches of the "thirties." And even the business conveyances are one by one being run off the road as new lines of railway are opened.

Moreover, nearly every business coach or wagonnette runs for the summer season only, while tourists are on the path; and as soon as October sets in, the different proprietors begin to think about taking their coaches off the road. Formerly some of the coachmen who had driven in the olden days took service on some of the out-of-the-way coaches, and if they sorely lamented that the "light of other days" had grown dim, they made the best of the changed surroundings. Those ancient artists, however, have long since gone to rest, and the few who do survive are far too old to think of driving; so a new school has arisen, and, though its exponents are in very many instances safe coachmen enough, they have never been taught by men who were either old coachmen themselves, or who learned under them, so that they have not the style of the true four-in-hand coachman. This subject will, however, be fully treated under the head of DRIVING.

These remarks, it must be distinctly understood, apply solely to those coaches which are entirely unconnected with amateurs and are run to make a profit. In the olden days so many horses were quickly knocked up by fast work that it was sometimes a difficult matter to

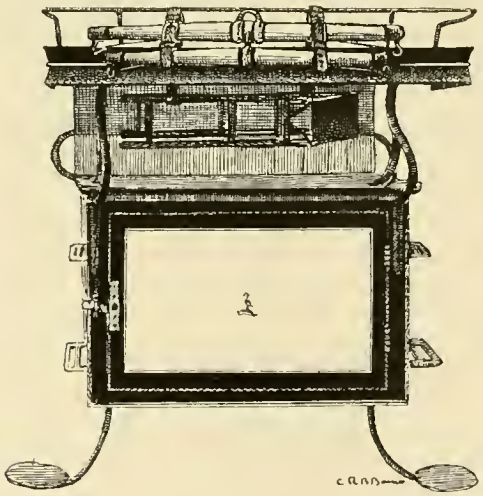
make both ends meet, especially if the proprietors had to pay fines for offences against any Act of Parliament—and informers were always on the look out for infringements—and damages for injury to passengers or for collisions. Now it seems quite impossible for any coach, however well it loads, to be turned out in first-rate style out of the passengers' fares, or it may be that where a fair amount of money is earned, the proprietors taking less interest in the appearance of the coaches, horses, and harness, especially as competition has died out, prefer to spend as little as possible on the turn-out, and to put as much money as possible to the profit side of the undertaking. For this view proprietors can scarcely be blamed in these cutting days, when every one desires to be carried cheaply, and to the passenger who has not been bred to coaching, or to the niceties of turning out a four-in-hand, it perhaps matters little if the standard of purely business coaching falls some way short of the ideal.

Taking leave then of purely professional and business coaching, we come to that in which the amateur element largely prevails. This phase of coaching was one entirely unknown in olden days. Amateurs, it is true, used frequently to drive the coaches of a former day when they had their "driving gloves on," which being interpreted meant that they had half a sovereign in their pocket for the coachman who would let them drive a stage. Other amateurs there were who really became professionals. Sir St. Vincent Cotton, Mr. Stephenson, who was educated at Eton and Cambridge, and who eventually drove the London and Brighton Age, and Mr. Charles Brindley, who is better known perhaps under his *nom de plume* of "Harry Hieover," were amongst those who took to horsing and driving stage coaches as a means of livelihood; while Captain Barclay of Ury (the 1000 miles in 1000 hours hero), Mr. Charles Jones, the Hon. E. Jerningham, the Dukes of Beaufort and Somerset, busied themselves about the affairs of the road. Those whilom amateurs who turned professionals made a very good thing of it, their incomes being something like £700 or £800 a year, though that did not last long.

Except in connection with trains, all stage coaching had died long before 1866, in which year the coach between London and Brighton was started by the Duke of Beaufort, Mr. Charles Lawrie, Mr. Angel, and a few others who remembered coaching as it was. Their example was followed by Mr. Charles Hoare, Colonel Stracey Clitherow, Lord Bective, and Colonel Hathorne. These coaches were started for the fun of driving them, but of course it was hoped that they would be so far patronised as to make the passenger fares pay a decent proportion of the outgoings. It may, however, safely be asserted that none of the modern coaches ever came near paying their expenses. In every case there has been a large deficit, which had to be taken out in pleasure. At the end of the season the horses were sold in several instances. In fact, in the majority of cases, the proprietors of a coach did not buy their horses, but contracted with some large dealer or jobmaster to supply as many horses as might be requisite to work the coach, but in those instances in which the proprietors did buy they sold at the end of the season, and if the horses were well bought, they made some money over

the stud. A good many of the horses were hunters, and people, who were in want of a horse to ride with hounds early in the season, knew that in buying a hunter out of a coach they were purchasing a horse in the best possible condition, and fit to go to work at once, and this fact accounts for some of the remunerative prices which were occasionally obtained.

Frequently two or three friends ran a coach together, and shared the driving, and no one else had a chance of "taking hold," unless they were known to the proprietors, and were given a stage or two by them. In the year 1878, however, a new departure was made. Major Dixon and one or two more put on the St. Albans Wonder coach, of which James Selby was one of the professionals. Selby, who had been professional on the Tunbridge Wells coach, by and by started a subscription coach; that is to say, a coach to which several amateurs subscribed a fixed sum, and in return for their money they had the privilege of driving one day a week, or on other days, if they went, provided no other subscriber was present. The passenger fares, of course, went to the proprietor, that is to say to Selby in this case, and so, if there were six subscribers paying £100 each, the proprietor had the nice little sum of £600 to work upon, irrespective of what he might take in passenger fares. This, of course, made all the difference between profit and loss, and since that time subscription coaches have



Back Seat of Park Coach or Drag.

increased and multiplied, until at the present day there is but one single coach which dispenses entirely with outside assistance. That coach is the Guildford New Times, run by Mr. Walter Shoolbred, who buys his own horses, pays all expenses, and takes no subscribers, and there is no better equipped coach running out of London, nor has there been its equal for very many years, if at all.

One by one the private proprietors have dropped out, and their places are taken by coaches to which amateurs, ambitious of driving, contribute. During the season of 1895 there were running out of London about a dozen coaches. In point of horsing the modern coaches would compare favourably with any of the older vehicles; in fact, many of the proprietors regard their annual sale at the end of the season as a means of making money. Being for the most part connected with the horse trade, they buy well. In point of number the coaches are rather over horsed, so that the teams have not too much work to do; they are carefully put together, and at the season's end bring, as a rule, prices very much in excess of those which were given for them.

In the old days the usual allowance was one horse per mile, or "one side of the road" as it was termed; that is to say, if the coach were put on from London to Brighton, taking the distance to be fifty-two miles, fifty-two horses would be required; but this allowance is greatly exceeded in modern coaches, since those which run a journey of about thirty miles out and thirty miles home have sometimes forty or fifty horses to work the coach. During recent years the system of contracting for the horses has been adopted by some proprietors, but the sale takes place just the same, he who finds the horses selling in expectation of his own benefit.

That a change has come over modern coaching is indisputable. When the coaching revival first began, the movement was entirely in the hands of amateurs, whereas now the supporters of coaching are not, with few exceptions, of the same social position as those who set coaching on its legs in the "sixties." For some reason or other, coaching does not now occupy the same *status* as it did. The subscribers and their friends form a goodly number of the passengers, but the bulk of the support comes from our American visitors. Many of these on coming to England put up at one or other of the hotels in and about Northumberland-avenue, and it is from there that all the coaches (except the Guildford New Times, which sets out from the Berkeley Hotel, Piccadilly) start. The booking offices are at the Hôtel Métropole and Hotel Victoria, and in fine weather the coaches load very well. No sooner, however, does rain set in, than the patronage visibly drops off, for coaching is now an amusement and nothing more, while in the winter, though three or four coaches are generally kept running, it is no uncommon sight to see coachman, guard, and the subscriber for the day, with the vehicle to themselves.

With the one exception of the Brighton Comet, all the coaches running out of London return on the same day; but the Comet runs from London to Brighton on Tuesday, Thurs-

day, and Saturday, and travels to London on the three intervening days. On Saturdays it is that the coach is most crowded, so any one to whom one day is as another would do well to select Tuesday or Thursday.

At different times in the history of the coaching revival there have been coaches to Portsmouth, Colchester, Eastbourne, and Oxford, and these, like the Brighton Comet, run down on one

Back Seat of Road Coach

day and up the next; but in each case the down journey was the more in favour with travellers.

The other coaches, as already mentioned, make the double journey in one day, reaching Northumberland Avenue about six in the evening. The length of the stages varies from about five to ten miles in length, and the changing of the horses makes some pleasant breaks in the journey, for there is always time for a passenger to stretch his legs while the fresh horses are being put to. The above were the arrangements for 1896; but it by no means follows that the summer of 1897 will see the same coaches on the road, or the same routes adhered to. These matters change every year in some detail or another in consequence of some new proprietor coming to the fore, or because some change in the route becomes necessary or is considered expedient.

Now that coaching, being no longer a necessity, is carried on practically for the benefit of those desirous of seeing the country round London, it can at least be said of it that it has made a good many people familiar with districts to which they had previously been strangers. Places within five and twenty miles or so of town are as a rule reached by a very slow train service, and few persons used to book themselves for any but the favourite riverside resorts. It was not until the coaching revival was set on foot in 1866 that Londoners, the majority of them at least, knew what the country between London and Brighton was like, save in so far as they could see it from the railway, while it was not until a few years later that the routes to Dorking, Guildford, West Wickham, High Wycombe, St. Albans, and other places were opened up. In the main the modern coaches have been run upon the lines which governed the older affairs, and perhaps in the earlier years of the revival old fashions were more adhered to than at the present time. The essence of stage coaching is punctuality, and this was fully recognised so long as it was managed in part by those who remembered the road as it used to be. To-day there is, on some routes, too much time spent at the changes—always excepting the New Times and one or two others—with the result that some coaches are late in arriving at their respective destinations.

[*See* Driving.] W. C. A. Blew.

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Note.—For Glossary of Coaching terms, see under Driving.

COALFISH, or GREEN COD, or GREEN POLLACK (*Gadus virens*). [*See* SEA-FISHING].

MEASUREMENTS, ETC.—Length of head $4\frac{1}{4}$ to $4\frac{2}{3}$, of caudal fin 6, height of body $4\frac{1}{4}$ to $4\frac{2}{3}$ in the total length. *Eye*—diameters $3\frac{1}{2}$ in the length of the head, 1 diameter from the end of the snout, and $\frac{2}{3}$ to 1 diameter apart. Lower jaw prominent. The maxilla reaches to below the first third of the eye. A rudimentary barbel beneath the chin. *Teeth*—cardiform in the jaws, present on the vomer, absent from the palatines and tongue. *Fins*—the first dorsal triangular, its third ray the longest and equals the extent of its base; a distinct interspace between the first and second dorsal fins, the highest ray of which last equals half the length of its base; an interspace between the second and third dorsal fins, the latter not extending on to the caudal. Anal commences below the last rays of the first dorsal, and terminates below the end of the second dorsal; second anal similar to the second dorsal. Ventral on the throat inserted anterior to the base of the pectoral, which rather exceeds half the length of the head. Caudal slightly forked or truncated. Vent situated on a vertical line beneath the last rays of the first dorsal fin. *Colours*—superiorly gray, becoming silvery on the sides and beneath. Fins gray, the dorsal and caudal dark-edged. Usually a black spot at the axil of the pectoral fins, by which it is mostly concealed. As they get older the dark colour deepens. *Lateral-line*—white, which at once distinguishes it from the haddock, where it is black.—Day's *Fishes of Great Britain and Ireland*, vol. i., p. 294.

COD (*Gadus morhua*). [*See* SEA-FISHING].

MEASUREMENTS, ETC.—Length of head $3\frac{2}{3}$ to $4\frac{1}{2}$, of caudal fin $6\frac{1}{2}$, height of body 4 to 5, or even more in the young, in the total length. *Eyes*—diameter $4\frac{1}{2}$ in the young to 7 in the adult in the length of the head; $1\frac{1}{2}$ diameters in the young to 2 in the adult from the end of the snout, and $1\frac{1}{4}$ in the young to 2 in the adult apart. Body much thickest anteriorly. Nostrils nearer to the eye than to the end of the snout. Snout conical. Mouth wide, with a deep cleft. Upper jaw the longer; the posterior extremity of the maxilla reaches to beneath the first third or middle of the eye. A barbel, generally as long as the eye, but sometimes shorter, is situated below the chin. *Teeth*—cardiform with an outer and much enlarged row in the upper jaw, in a V-shaped patch on the vomer, absent from the palatines and tongue. *Fins*—the first dorsal somewhat triangular; it commences over or slightly posterior to the base of the pectoral, its fourth ray being the longest and about equal to the extent of the base of the fin; from it they diminish in height to the last, which is very short. There exists a very short interspace between the bases of the two first dorsal fins, the fourth ray being somewhat the longest, but not quite equal to half the length of the base of the fin. They decrease in height to the three last, which are short. A very short interspace exists between the second and third dorsal fins, and a longer or shorter interspace occurs between its termination and the base of the outermost caudal rays. The anterior anal fin commences on a vertical line below the fourth or fifth ray of the second dorsal, and a short interspace exists between it and the origin of the second anal, which is similar to the third dorsal. Caudal slightly emarginate, or square, at its extremity. Ventrals small, inserted rather before the base of the pectorals, which are as long as the postorbital portion of the head. Vent situated on a vertical line beneath the first rays of the second dorsal fin. *Scales*—small and cycloid. *Lateral-line*—passes backwards from opposite the upper edge of the orbit, attaining below the centre of the second dorsal fin nearly the middle of the depth of the body, from whence it is continued straight to the centre of the base of the caudal. *Cæcal appendages*—numerous and short. *Colours*—greenish or grayish, or olive, and occasionally covered with yellow or brown spots along the back and upper two-thirds of the body, its lower portion pure white. Lateral-line white, especially in its lower half. Fins gray, darkest towards their outer edges.—Day's *Fishes of Great Britain and Ireland*, vol. i., p. 277.

CONGER (*Conger vulgaris*). [*See* SEA-FISHING].

MEASUREMENTS, ETC.—Length of head 7 to 8, height of body 16 to 20 in the total length. Body anteriorly rounded, becoming compressed in its posterior portion. Head depressed. Mouth wide, the upper jaw very slightly the longer, its cleft extending to below the middle of the orbit. The posterior nostril patent, the anterior tubular. *Teeth*—cardiform in the upper jaw, one regular row of teeth of the same size and placed close together form a cutting edge; a short band on the vomer; cardiform likewise in the lower jaw similar to those in the upper *Fins*—the dorsal commences above the last quarter or end of the pectoral: the anal in the middle of the total length. *Colours*—generally grayish, becoming lighter or even white beneath. A row of white spots marks the openings from the lateral-line. The margins of the vertical fins black.—Day's *Fishes of Great Britain and Ireland*, vol. ii., p. 251.

CONSERVANCY OF RIVERS.—The United Kingdom is to a large extent mapped out into Fishery Districts, both as regards the sea-coast and inland portions of the country, and Boards or Committees have been formed to administer the law. As regards fresh waters, however, there are not many districts in which it can be said that the Boards have worked much or any improvement, and in not a few cases the majority of seats upon them have been obtained by men who represent the netting or commercial interest, and not only totally neglect the interests of sport, but have laid themselves open to the charge of allowing the netsmen to kill an excessive quantity of fish.

We propose to give a few suggestions as to the best means of increasing the stock of fish in rivers, &c., suggestions which we trust will be taken to heart not only by riparian owners, but also by the members of Fishery Boards. It should be stated at once, however, that as regards sea-fishery districts not a few committees have acted most wisely and beneficially in putting a stop to inshore trawling, a course which will, it is hoped, work great things for the sea fisheries adjoining our coasts. England does not stand alone in this action. The Government of Denmark owns valuable fisheries in territorial waters adjoining the Faröe Islands, which are now frequented by English fishermen who have, thanks mainly to the steam trawler, fished out the formerly prolific banks of the North Sea. In these Faröe fisheries Denmark has strictly prohibited trawling of every kind and description, and has made it an offence to be in possession of a trawl while in those waters. As a matter of fact, Continental and English fishermen have lost nothing by this salutary legislation, for they find themselves able to make immense takes of fish by means of long

lines, whereas, had steam trawling been allowed, those fisheries might have been worked out in the course of a few years.

As regards salmon rivers, netting is prohibited by Act of Parliament for a short period once a week, with the object of enabling the fish to ascend to the upper waters. But where rivers are long, and nets are used for a considerable distance above the tideway, the only result of this arrangement is that the fish which are missed during the weekly close time by the fishermen of the estuary get caught on Monday, when the close time ends, by the netsmen higher up. In such rivers it would be most beneficial to make different weekly close times for different portions of the river, for instance, making Saturday and Sunday a close time for the tidal portions, and Monday and Tuesday for a certain number of miles above the tidal portions. Or the weekly close time could be lengthened on all rivers, a proposed change which found favour with a recent Fishery Commission.

In cases where Fishery Boards derive an income from the sale of licenses to netsmen and sportsmen, a large portion of the money so raised should be devoted to the artificial culture of salmon in salmon rivers, trout in trout streams, and coarse fish in other waters. River pollution, which is a standing disgrace to England and Scotland, should be most sternly dealt with, not so much as regards mere household sewage, but as regards the destructive chemical waste products which flow from mills and manufactories of all kinds. Nor must the upper portions of salmon rivers, which are the breeding grounds of the river, be neglected. These require to be made accessible by the removal of obstructions, the shallows in which the eggs are deposited kept clean, and the fish protected from poachers when spawning.

Another point to which too little attention is given is the disturbance of fish by steam traffic in estuaries. It may be that an Act of Parliament would be required to deal with this matter, but it would be highly desirable in the interests of salmon and other fisheries that a limit of speed should be placed on big steamers entering those of our ports into which flow important salmon rivers. As the steam traffic increases in any river estuary, or other inlet of the sea, fish of all kinds, which are very shy creatures, as certainly decrease, and having regard to the importance of the fishing industry and the large rents paid by sportsmen for fishing rights, it only seems reasonable that restrictions of this kind should be placed upon the steamship owners.

With regard to trout streams, given a reasonably suitable extent of water and a not too severe climate, almost anything can be done within fair limits, thanks to fish culture. In some waters the stock is maintained by making a rather high weight or size-limit and returning everything beneath that weight or length, as the case may be, and most certainly the stock of fish can be maintained by this means, provided other conditions are favourable. But one result of this method is that the fish, being caught several times over during their youth, become, when over the size-limit, so exceedingly cautious and difficult to capture that all but very first-class fishermen sometimes despair of making a reasonable basket.

We have more than once suggested that the stock could be equally well maintained by having a much smaller size limit, and making it the rule to turn into the stream one or two yearlings or two-year-olds for every fish taken out. The fish would then rise more freely and better bags could be obtained (for, after all, the object of fishing is to catch fish), and by the continuous introduction of new blood the breed of fish would probably be improved. Yearling trout can be purchased at as low a rate as £10 a thousand, so that the outlay is inconsiderable. A man who gives a £100 or more for his fishing rights should not hesitate to spend an extra £10 in restocking. Given suitable water, there is, as a matter of fact, no reason why he should even buy his fish, for they are very easily bred, as will be gathered from the article on PISCICULTURE (*q.v.*).

Where some suitable pond is available, fishery owners can hardly do better than stock it with yearlings and net it at the end of one or two years for the benefit of the main stream. But it should be a pond which can be run dry, for unless it can be emptied of water a certain number of trout will inevitably be left in, and these, on its being restocked with yearlings, will levy a heavy toll upon the new arrivals. Other details in connection with the preservation of trout are the prevention of pollution; the netting of all coarse fish, particularly pike and chub; the removal of mud if it collects in too large quantities on gravelly shallows, and the judicious cutting of weeds. When streams are very bare of cover they can be greatly improved by placing "hides" for the fish, such as drain-pipes, rocks, and the like. Very shallow streams can easily be deepened by means of dams, or can be widened out here and there into lakes. Ponds, moreover, containing only coarse fish can be emptied, cleared of mud, and stocked with trout. Many reservoirs have been stocked with great success.

As regards coarse fish streams, such as the Thames, the Trent, the Bedfordshire Ouse, the Welland, the rivers of the Norfolk Broads, &c., much can be done to maintain a head of fish and provide a certain quantity for annual destruction by anglers, without going to much expense. In navigable rivers the steam traffic is perhaps the deadliest enemy of the fish, which, in the egg and early stages of fryhood, are destroyed in millions by the wash caused by launches or other steamers. Where it is possible, and the fisheries are valuable, steam traffic should be altogether prohibited, but where that

course cannot be followed it should at least be prohibited during the spring months when coarse fish are spawning, or a rule could be made that no steamer should then be allowed to navigate the water at more than a certain number of miles an hour, or, as an alternative, that any one in command of such a vessel driving it at a speed which creates any swell or wash should be guilty of an offence and be liable to a penalty. There is certainly no river in England in which the speed of the steam traffic might not without difficulty be limited during the spawning season.

The next greatest enemies to coarse fish are probably swans and ducks, the latter no less than the former. It is of the greatest importance that these be kept off the water from the first of March to the first of June. The amount of eggs which are picked off the weeds by half a dozen ducks in the course of a day is something astounding. I have seen a small brood of ducks work the side of a river for a mile or more in the course of an afternoon, and, so far as I could see, eat up every grain of the perch spawn which had been deposited there in considerable quantities. If these birds cannot be debarred from swimming in the river during the spawning months, the next best plan is to afford some protection to the spawn, and in the case of perch this is easily effected.

Men who are acquainted with the river know the spawning grounds, and after the perch eggs have been deposited, it is not difficult to cover them up with wire netting. But perch are accommodating creatures, and if open hurdles, within which withy wands or other twigs have been interlaced, are staked down in water about five to seven feet in depth, and surrounded by wire netting, the breeding fish will usually deposit their spawn upon the twigs, and there it will hatch out safe from swans and ducks. This has been done many times with great success in the Thames, in the Reading and Henley districts.

Perch can be introduced without difficulty into any water by collecting perch eggs from rivers or canals where these fish abound, and placing them on hurdles in their new abode and protecting them as before explained. In coarse fish streams the standard of size, beneath which all caught must be returned to the water, is all important. An excellent standard is in existence on the Thames, and it might be followed in any south country river.

In the north, where the fish run rather smaller, it would have to be modified.

Thames Standard.

Pike or Jack	18 in.	Grayling	12 in.
Perch	8 ,,	Bream	10 ,,
Chub	10 ,,	Carp	10 ,,
Roach	7 ,,	Tench	8 ,,
Dace	6 ,,	Rudd	6 ,,
Barbel	16 ,,	Gudgeon	4 ,,
Trout	16 ,,		

To preserve pike it is most desirable to prohibit trimmers and fishing either with live or dead gorge, methods which destroy every fish caught. In all streams, to defeat the pot-hunter, it is desirable to enact that no person may fish with more than two rods at one and the same time. Before this excellent rule, for which we were responsible, came into force on the Thames, we have known as many as ten rods to be used at one time by one fisherman, all laid out from the bank, and have seen five rods used from a punt by a person who was live baiting for pike.

There is a phase of this subject which does not obtain the attention it deserves. It is the question of food. In rocky trout streams and in many a Highland loch there is insufficient food and the result is a race of pigmy trout or other fish. Fresh water snails, weeds which are prolific in insect life, fresh water shrimps, and other fish food, may all be introduced. But the natural conditions of lake and river have to considered in each particular case, and the would-be improver of his fishery should take skilled advice before tampering with his water. One thing should be borne in mind, that there are very few streams or lakes which will produce a large number of large fish; it is generally a choice between a few large fish or many small ones.

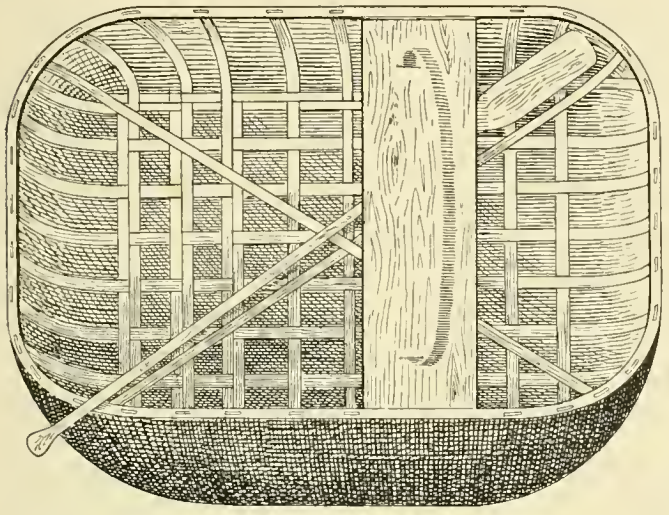
JOHN BICKERDYKE.

CORACLES — The osier-woven, skin-covered basket of the Ancient Britons still survives on the Welsh rivers, more particularly on the Dee, in the shape of the Coracle, the fisherman's boat of those rapid streams. With slight variations of shape, even in modern times it may yet be described as a square basket with a seat across it, and at a little distance its occupant looks as if he had gone afloat in a washing tub. But no other kind of craft would so well suit the solitary angler on the rapids of the Dee or Severn as this odd-shaped vessel. With one hand wielding the paddle and the other his fly-rod, he drifts down the rippling shallows, shoots the boiling rapids and paddles gently along the still deeps. Then, when his fishing is over, he claps the Coracle upside down on his head and shoulders, and stalks back.

As a Coracle is so easily transported, either by manual power or on a donkey or pony cart, it is somewhat surprising that its use has not spread to Scottish moorland lochs and the smaller rivers. One man can propel it and fish from it at the same time, which is not usually the case with any other type of boat, and if it rains heavily he can land and use it as an umbrella. Its use is not confined to trout-fishing. It is constantly used for salmon-fishing, but in such cases it is advisable to land to play a fish, for a Coracle, having four sides instead of two, has four ways of capsizing instead of the two ways of the ordinary row boat. A Coracle may be

made in a day, except for the drying of the tar or paint, and it would not be difficult to carry the necessary laths and a square of canvas already waterproofed to any outlandish place where a boat might be needed.

The dimensions of a Coracle are about as follows:—The square on the floor or water-line is four feet and the sides tumble in six inches, so that the square at the gunwale is three feet. The depth is thirteen inches; the square has of course rounded corners. Older Coracles had straight sides or a flare out on the front side, but the tumble-in type gives the most stability,



having a wider floor. The width of the gunwale square is limited by the fact that the occupant must sit in the middle and be able to ply his paddle over the side without leaning over. The bottom is flat and the draught only two or three inches.

To make the frame, get twenty long, clean laths, say eight feet long, by one inch and a half wide by three-sixteenths of an inch thick. Interlace ten across the other ten so as to form a lattice nearly four feet square, with the ends of the laths projecting about two feet. Bend these ends up to meet the previously prepared frame of the gunwale and fasten. Place a seat across from one side to the other and have some light floor-boards, and the frame of the boat is complete. Cover with canvas, and coat with boiling tar and pitch or, as in my own experience I prefer, good white lead paint made gray or brown in colour to match the boulders in the river. The single paddle is like the lower half of a flat-bladed scull, but very much lighter in make and is about four feet long. It is held in the hand midway, with the shaft braced against the outer side of the upper arm; the palm of the hand is towards the boat, and preferably the shaft should be grasped between the first and second fingers. The stroke follows the shape of a figure of eight, propelling the Coracle sideways, and is not easy to acquire at first. The efforts of the Sassenach to guide his Coracle, and prevent it from doing nothing but spin round have formed the subject of much amusing caricature in Wales.

In the shallows, of course, the Coracle may be stopped, retarded, or guided by pressing the paddle on the stones, and if the current is not too strong it may be worked from side to side of the river as it floats down, so that every part may be fished. It is essentially a craft which must go with the current on a river and with the wind on a lake, but it is so light that it is easily carried back to the starting point.

I have known a fisherman who thought nothing of walking ten miles up stream, with his Coracle on his back, for the purpose of fishing down.

Sometimes two persons use the Coracle, one paddling and the other fishing, usually a professional and a visitor; but to enjoy the true sport of Coracle-fishing, one should be alone.

G. Christopher Davies.

CORACLES, INDIAN—These are made umbrella-shaped, 8 ft. across, 2 ft. deep, being a convenient size for fishing purposes. They are of split bamboo basket-work, covered with sewn ox-hide and without seat of any kind. Such a coracle, which can be easily carried by one man, and will comfortably hold two, is propelled by a paddle; and as it draws but a couple of inches of water, and will bear hard bumps against rocks, is invaluable for descending rocky rivers, floating buoyantly down many a rapid, apparently impossible of navigation. Large coracles of this description have been used for ferrying troops.

CORMORANT (*Phalacrocorax carbo*)—The Cormorant is a large sea fowl of dark green colour, looking uniformly black at a distance, weighing from seven to eight pounds, and characterised by a long straight beak strongly decurved at the extremity, a stiff rudder-like tail of fourteen feathers, and feet with all four toes united by a membrane. In this respect it agrees with another species of the same genus, which also inhabits the rocky portions of our coast, namely, the Crested Cormorant, or Shag (*P. cristatus*), a smaller bird, without the white patch on the thigh, and with only twelve instead of fourteen tail feathers. Both species breed gregariously in sea cliffs, on rocky islands, and occasionally in trees, after the manner of herons and spoonbills, forming a

large clumsy nest of sticks and seaweed, in which are deposited four or five chalky-looking eggs. When taken young from the nest or captured soon after it has quitted it, by means presently to be described, the Cormorant is easily tamed, and may be taught to exercise its natural aptitude in taking fish for the pleasure of its owner.

The earliest description which the writer has met with of the sport as observed in China by

a European occurs in an English translation by R. Willes (from the Italian version first printed at Venice) of a Portuguese MS. by one Galotti Pereira, who, about the middle of the sixteenth century, was with others of his countrymen a prisoner in China. It occurs under the heading "Reportes of the Province China" in a small and rare quarto volume entitled *The History of Trauayle in the West and East Indies and other countreys lying eyther way towards the fruitfull and ryche Moluccaes.* By Richarde Eden, 1577. At page 253 we read:—"At the houre appoynted to fyshe, all the barges are brought togeather in a circle where the ryver is shalowe, and the crowes, tyed togeather under the wynges, are let leape downe into the water, some under, some above, worth the lookying uppon; eche one as he hath filled his bagge, goeth to his own barge and emptieth it, whiche done, he retourneth to fyshe agayne."

This was at Pekin, where the travellers in question saw no fewer than twenty barges so employed. A more satisfactory account of the practice may be found in Milne's *Life in China*, 1857 (p. 307).

It is most likely that the sport was first made known in Europe towards the end of the sixteenth century by the Dutch, who, besides being enterprising navigators and traders in the East, have in all ages been known as skilful falconers and great bird-fanciers. In 1609 Louis XIII., then a youth, witnessed this sport in the grounds at Fontainebleau, and in 1611 our own James I. had appointed "a master of Cormorants" in England. An entry in the "Issues of the Exchequer of that reign" shows that in April 1611 John Wood was paid £30 "for his trouble in bringing up and training of certain fowls called Cormorants, and making of them fit for the use of fishing." In May of the following year he was appointed "to travel into some of the further parts of this realm for young Cormorants, which afterwards are to be made fit for his Majesty's sport and recreation," for which he received another £30.

In 1618 the King had become so fascinated with the sport, that he decided to build a house and make some ponds for his Cormorants, ospreys, and otters at Westminster, and for this purpose he leased of Lord Danvers a piece of meadow ground, about an acre and a quarter, lying in the Vine Garden near Westminster Abbey, at the yearly rent of £7. A brick building was erected on this ground, at a cost of £100, and nine fish-ponds were dug, costing altogether another £40. These ponds were stored with carp, tench, barbel, roach, and dace (100 of each), and a sluice of elm planking was made to bring the water from the Thames. The total outlay incurred upon this, the first Westminster Aquarium, was £268, for which amount, in August 1618, the King gave an order upon the Treasury.

At Theobalds, also, his favourite hunting seat in Hertfordshire, and also at Thetford, in Norfolk, these birds were employed in fishing for the King's pleasure.

Of late years the sport has been revived both in England and France, thanks to the efforts of Captain F. H. Salvin and the late John Barr in this country, and to the Comte le Couteulx, M. Pichot, and M. de la Rue on the Continent.

Cormorants are not difficult to train, and do not require nearly so much care as hawks. They may be taken from the nest when they are ready to fly, or may be caught later in the year when fully feathered. The latter plan is preferable, for the birds have then had some experience in fishing, and are sure to be in good condition.

To catch them, it is only necessary to visit some tidal harbour wherein there are large posts set (to mark the river channel), on which Cormorants are fond of resting. A few strong gins, having the teeth bound with list to prevent injury, may then be set, unbaited, on the square

tops of two or three of the favourite posts, each gin being attached to the post by a line with a float. It is easy to arrange with a fisherman to keep watch in a boat at a little distance; and as soon as a Cormorant alights and is trapped, it will come off at once into the water, and should be taken up as soon as possible. A cloth should be thrown over the back and wings, two corners being tied securely under the chin, and the other two corners under the tail behind the legs. The bird may then be tethered by the legs until brought ashore. While this operation is being performed, it should be held firmly, yet gently, by grasping first the back of the head and then the closed beak, care of course being taken to avoid a bite, which would be a very sharp one.

On getting ashore with two or three captures, the flight feathers of the left wing should be cut neatly with a large pair of scissors, and the birds turned into a loose box, or any outhouse from which they cannot escape, care being taken to lay down straw, tan, or sawdust, to prevent the breakage of the stiff tail feathers, which form so useful a rudder when in the water. Here they may be fed on fish, until such time as they can be forwarded to their ultimate destination. The training is commenced by putting soft leather straps or "jesses" on one or both legs, as with a hawk, to which a line is attached when the bird is first allowed in the water.

Capt. F. H. Salvin's Sub-Inspector.

It is taught (like a hawk) to come to the "the lure"—a tin box containing its food which is rattled every time the bird is fed—and may even be carried on the gloved hand like a falcon. A small leather strap being buckled round the lower part of the neck before the bird is allowed to enter the water, it is unable to do more than pouch any fish that it may catch, and has to come ashore to be relieved of its burden by its master, who rewards it every time for its obedience. After a little practice the line is dispensed with, and the bird soon becomes very docile, seeming fully to understand all that is required of it.

The Chinese method of fishing with Cormorants differs but little from that employed by English and French amateurs at the present day. In China, however, the birds, smaller than our *Phalacrocorax carbo*, and of a different species (*Phalacrocorax sinensis*, called by the Chinese *Leu-tze*), are carried on light shallow punts or rafts, and are commonly employed, not, as here, for amusement, but as a matter of business to supply the markets with fish.

J. E. Harting.

COURSING is one of the most ancient of field sports. King Solomon speaks of the greyhound as an example of what "goes well, and is comely in going." From the Greek historian, warrior, and philosopher, Arrian, who flourished in the second century of the present era, we gather everything worth knowing of coursing as practised by the people of his time. Many of the forms and methods of those days are still adhered to, though it is singular to note in Arrian's writings on the subject an entire absence of any code of rules or laws for gauging the merits of the competing greyhounds.

Although coursing was an undoubtedly popular pastime in the British Isles during the middle ages, it is some centuries later ere one discovers evidence of its being carried on with a due regard to the system and regularity that characterise the coursing of the present day.

The first authenticated code of rules for judging the work done by a brace of greyhounds in pursuit of a hare was compiled in the days of Queen Elizabeth. The title runs (probably a revised version): "*The Laws of the Leash or Coursing, as they were commanded, allowed, and subscribed by Thomas, late Duke of Norfolk, in the reign of Queen Elizabeth.*" These rules governed coursing until about the third quarter of the last century, when the sport, which hitherto had been confined to matches between braces of greyhounds, underwent a complete revolution.

Origin of Coursing Clubs—Clubs then sprang into existence, the first of these institutions being located at Swaffham, in Norfolk, with Lord Orford as its founder. There is a Swaffham Club at this present day, but it is only a recent namesake of the old association, though coursing over the very same ground. Coursing clubs quickly became the fashion, after the foundation of the Swaffham Club, and one of the earliest was Ashdown, in Berkshire, under the patronage of the then Earl of Craven. Successive owners of this incomparable coursing country have been actively identified with the sport, but the club

long ago dropped out of existence, whilst the splendid open meetings which followed—frequently lasting over a week—have almost dwindled away.

The numberless coursing clubs that at one time or other in the latter part of the last and in the present century were in existence, are, with very few exceptions, extinct. Amongst the oldest yet living may be mentioned the Altcar Club, the Ridgway Club, the Scottish National Club, and the North of England Club. The **Altcar Club**, established in 1825 by the then Earl of Sefton, has all these years enjoyed the privilege of using the fine lands of the Sefton estates, near Liverpool, and the present peer has for a long time been president. The **Ridgway Club** was founded some years later than the Altcar Club, and the membership of the two is at the present time, and has long been, identical. The ground coursed on is the splendid Clifton Hall estate, near Lytham, in Lancashire. The club owes its now historical name to Mr. Thomas Ridgway, its first president. Of the **Scottish National Club** it need only be said that, having passed through many vicissitudes in consequence of loss of ground, it is now apparently firmly planted on the Hoddom Castle estate in Dumfriesshire, through the kindness of Mr. Edward Brook, who takes an especial interest in its fortunes, although not a courser himself.

In Ireland, where the instinct of sport is naturally keen, many old and influential coursing clubs of times past are now forgotten, not to omit the open meetings which for many years were held over the historical Raughlan and Derrymacash meadows of the late Lord Lurgan in county Armagh, and attracted crowds of sportsmen from every corner of the kingdom.

Laws of Coursing—Reverting to the laws that govern coursing, the old system of the Duke of Norfolk's time was pretty well done away with early in the present century; indeed, in 1828, the members of the Ashdown Park Club compiled a code of their own. Half a dozen years later a new set of rules was promulgated for general use by Mr. Thomas Thacker, who also introduced a yearly calendar of the sport. These latter rules were more or less in use until 1858, when it was universally agreed that coursing having become so popular in England, Ireland, and Scotland, the time had arrived when an association should be founded for its government on some such lines as the Jockey Club, which controls racing. Accordingly a small committee, consisting of Mr. Edward Marjoribanks, Mr. W. G. Borron, and "Stonehenge" (of *The Field*) was deputed to draw up rules for the establishment of the **National Coursing Club**. The first president was appropriately Mr. Marjoribanks, and on his death he was worthily succeeded by the

W. Frank Calderon

Juan Chicharro y Ogra

Coursing

present Earl of Sefton. The National Coursing Club itself is composed of delegates from the different clubs, with a certain number of elective members. Meetings are periodically held during the year in London and Liverpool, at which all cases of complaint and appeal are considered and adjusted. With the founding of the National Club, coursing was at length put upon a business-like basis, as, though hitherto there had been rules for deciding the merits of the competing greyhounds' work, regulations for the mere conduct of a meeting had been almost unknown. As time rolled on the necessity for a systematic record of a greyhound's breeding and antecedents became most apparent, and in 1882 the **Greyhound Stud Book** was instituted, by means of which it is, in many instances, possible to trace back the genealogy of an animal to the last century; but, most important of all, no greyhound can be registered without a pedigree, and no greyhound is qualified to run in public unless its name appears in the "Stud Book" [*see* STUD BOOKS]. In these directions complete control has been acquired over coursing in the United Kingdom by the National Coursing Club, and it is a safe assertion that no field sport is more systematically conducted than is coursing at the present day.

The passing of the "Ground Game Act" in 1880 undoubtedly arrested the prosperity of coursing throughout the kingdom—indeed, in very many quarters it was feared that a crisis had come, and that the total extinction of the old pastime was but a question of a few years at the utmost. The effects of the measure were more especially and speedily felt in Scotland, meeting after meeting dropping out of existence through force of circumstances. A striking illustration of the extent to which coursing has fallen away over the Borders may be gathered from the fact that, whereas up to the year 1880 nearly a hundred days' running was customary during the six months' season, for years past no more than a dozen or fourteen days can be mustered.

In England and Ireland, however, the storm has been successfully weathered, and coursing farmers are strong enough in numbers to ensure a supply of hares for many a year to come, in co-operation, of course, with landed proprietors like Lord Sefton, Lord Anglesey, Lord Ripon, Lord Londonderry, Lord Massereene, Mr. Clifton, Lord Drogheda, Lord Craven, Sir Edmund Antrobus, and many others; while Scotland may still count upon the cordial assistance of Sir Robert Jardine, Bart., Sir W. C. Anstruther, Bart., and Mr. Brook.

Inclosures—The loss of so many estates to coursing through the operation of the "Ground Game Act" led to the substitution of a modified system of sport in the shape of inclosures, that is to say, a piece of ground was fenced round, and a thin cover formed at each end, from which imprisoned hares were coursed to the other by a brace of greyhounds. The first of these inclosures was at Plumpton, in Sussex, then followed Gosforth Park, near Newcastle-on-Tyne, Four Oaks Park, near Birmingham, and Haydock Park, near Liverpool, not to omit the Kempton Park racecourse. This drawing-room style of coursing was all the rage for a few years, and large sums were added to the entry money, whilst, as speed to the hare was the chief *desideratum*, people began to breed greyhounds accordingly, to the certain deterioration of the pure type of animal. Added to this, dishonest practices became too prevalent, which in the old-fashioned sport had been hitherto almost unknown. The end eventually arrived, for the true sportsman shunned the new-fangled invention and returned to his old love, with the result that every one of the afore-mentioned inclosures is now well-nigh forgotten. It is true that an inclosure was subsequently formed in Essex, and is still in operation; but it is under the management of a club committee, composed principally of members of the National Coursing Club. Moreover, the sport is as near perfection as can be desired, so that there is little comparison between it and the other places that have been named. In Ireland there are three or four inclosures, under responsible control; but in Scotland artificial coursing is unknown.

The Waterloo Cup—The Waterloo Cup has long been the chief prize of the coursing year, ranking, indeed, with the Derby of the Turf, and it has been copied in other countries where the sport has been introduced. Strange to say, its origin and beginnings were of the humblest character, and its promoter never could have foreseen its ultimate importance, though he lived to see the event one that it was the ambition of every courser to win. It was in the year 1836 that the proprietor of the Waterloo Hotel in Liverpool improvised an eight-dog stake, which he styled the Waterloo Cup, and it was run for on the Altcar estate of Lord Sefton, the home of the famous Altcar Coursing Club before referred to, and ever since it has been decided on the same ground. Appropriately, the founder of the first Waterloo Cup was the winner, and, better still, he achieved the distinction by nominating a greyhound, belonging to Lord Molyneux, called *Milanie*. Lord Molyneux was father of the present peer, so long connected with coursing. The year following its foundation the Waterloo Cup was increased to sixteen runners, and the year after to thirty-two, at which limit it remained till 1857, when it was made a sixty-four dog stake, and continues so to the present day. The entry money is £25 per greyhound, and the nominations, giving the right of competing, are usually arranged by a committee of members of the Altcar Club at the November meeting of that institution. The running takes place in February, when frost

does not interfere, and, with a Waterloo Purse and Plate for the thirty-two and sixteen greyhounds beaten in the first and second rounds of the Cup respectively, the meeting is comfortably completed in three days. The stake partakes of an international character, though England, with the preponderance in nominations over Ireland and Scotland, necessarily possesses the best chances of winning the coveted prize. Since 1857 England has provided thirty-one winners, Scotland five, and Ireland the same number. For some years past a trophy has accompanied the winner's stakes in the Waterloo Cup in the shape of a collar, which is embellished with medals recording the names of the winners year by year. Since it was increased to a sixty-four dog stake, amongst winners of the Waterloo Cup no fewer than sixteen of the forty greyhounds were "named," that is to say, the owners were not the nominators, although the most particularly interested parties. Singular features of the Waterloo Cup are noted in connection with two consequently celebrated greyhounds, namely, Lord Lurgan's *Master M'Grath* and the late Colonel North's *Fullerton*, the former of whom was victor on three occasions, with a break of a year, whilst the latter actually divided with a kennel companion and then won outright three years in succession. The wonderful merit of these performances is strikingly apparent when it is seen that a greyhound has to defeat six opponents before it can be proclaimed the winner of a Waterloo Cup, not to omit the chance of getting extra courses in the shape of "undecideds." *Coomassie*, one of the smallest greyhounds ever known, was the winner in two successive years; but previously, when the stake was a "thirty-two," entailing five courses for the winner, *Cerito* was three times successful, with a break between the first and second occasions.

The Colonies—Here Coursing was introduced with more or less success. In Australasia (covering the great island continent, Tasmania and New Zealand), the sport was at one time exceedingly popular, the most influential men entering into it, regardless of expense, judging from the prices they paid for imported greyhounds. Of late years, however, interest in the pastime has declined, and the strongest and most influential clubs of fifteen or twenty years ago have ceased to exist; in fact, in Australia itself, coursing is now confined to the country districts. To South Australia must be given the credit of introducing the pastime to the "Greater Britain of the South." It was in the year 1867 that a few sportsmen were hunting kangaroo with greyhounds, when a wallaby (a smaller species of the marsupial) jumped up, and a very fine course resulted. A new arrival from England at once suggested the formation of a coursing club, which proved the forerunner of coursing as practised in this country, especially as the English hare had about that time been introduced successfully—too much so, as eventually turned out, for the farmer, for it breeds three or four times a year, with as many as four and five in a litter. Hares, in fact, in some of the colonies have been for years legally classed as "vermin." Emulating the old country, Waterloo Cups were started in South Australia, New South Wales, Victoria, and New Zealand. That in Victoria was for years conducted on precisely the same lines as ours, the stake and number of greyhounds being identical, and imported English dogs frequently were victorious, whilst the late Mr. George Warwick, the leading judge of his time, was engaged for a season. In addition, a National Coursing Club was founded, and subsequently a greyhound registration system followed. All these, however, are now merely matters of history.

The Continent—Some years ago, coursing, according to the English system, was introduced into Russia by the Grand Duke Michael, Prince and Princess Alexander Scherbatoff, and Count Stroganoff, the two latter of whom kept up kennels in England, and joined the principal clubs, and Count Stroganoff won the Waterloo Cup in 1894 with *Texture*, an English-bred greyhound that he had purchased only a few weeks previously in London for 110 guineas. This is one of the most striking exemplifications of the "luck" that is popularly supposed to surround Coursing. The Coursing in Russia takes place near St. Petersburg and Moscow, and the principal event is the Waterloo Cup, the peculiarity of which is the circumstance that most of the nominators run several greyhounds in their own individual names, and thus frequently "sweep the board." The Russian Waterloo Cup has generally been won by English-bred greyhounds; and an English judge and slipper are always engaged.

Coursing was experimented in France ten or a dozen years ago, on the inclosed system; but after one or two successful seasons it quietly died away, for reasons to which it is unnecessary to allude.

America—In the United States Coursing appears to have taken firm root, the one drawback being the many hundred miles separating the great centres of population from the prairie land in the west, where the running takes place. The National Greyhound Club's rules are almost identical with the English version: there is also a "Greyhound Stud Book," not to omit a Waterloo Cup. On the prairies the animal known as the jack rabbit abounds, and so game is readily at hand—in fact, it in every way tests to the utmost the qualities of a first-class greyhound.

The Judge.—A "good judge" is the *sine qua non* of a well-organised coursing meeting; and ever since the sporting papers commenced full detailed reports, their representatives have

never hesitated to criticise what in their opinions was an error on the part of the official on horseback, or as in some countries, notably Lytham and Southport, on the ladder. In the last century, when matches between a brace of greyhounds were in vogue, the owner of each chose an umpire, and these two in their turn appointed a referee, in case of a difference of opinion. One of the earliest and best known judges of the present century was Mr. William Nightingale, whose heart and soul were in his work from the moment a couple of greyhounds were slipped. He was enthusiastic to a degree when he spotted a good dog, and equally the contrary with one of the opposite stamp. Following him was Mr. Anthony Dalzell, and then Mr. George Warwick, who in the zenith of his career once judged 105 days in a single season, frequently having to travel from the extreme south to Scotland, and *vice versa*, so as to be on the ground the following morning by nine o'clock or often earlier. Some big days, too, he accomplished, his record being 101 courses in a single day at Lurgan. If anything, Mr. Warwick's feats have been excelled by Mr. James Hedley, the leading judge of the present day, a born courser, so to speak, as his father was a keen follower of the sport on the Borders, and was wont to take the future judge out to meetings when quite a small boy. Suffice it to say that the nominators of no fewer than twenty-four Waterloo Cups have elected Mr. Hedley their judge, a striking testimony to his wonderful ability and unquestionable honesty. Next to him Mr. R. A. Brice's services are most in request, and then those of Mr. H. C. Fulwell and Mr. N. K. Wentworth.

Officials.— Indispensable officials to coursing meetings are the **slipper**, the **flag steward**, and the **slip steward**. The first-named must not only be an adept at handling the leash, so as to start each dog on equal terms, but he must likewise be a smart pedestrian (running as well as walking). The late Tom Raper (a Yorkshireman) was undoubtedly the most capable of his time, and since his day he has not been approached by the later generation. The flag steward's duty is to signal the judge's decision promptly, and, of course, correctly, as a single error on his part creates no end of confusion. Hence it is better that he should be an expert in the sport, and keep the competing greyhounds in his eye as long as they remain in sight. The slip steward also is a responsible official, it being his duty to see that the greyhounds are brought to slips in proper time, and in their proper turn.

W. F. Lamonby ("Skiddaw").

GREYHOUND CELEBRITIES.— In treating of celebrities among greyhounds it is somewhat strange that we should find ourselves restricted to the last hundred years or so for any authentic information. For a record of names, not to speak of performances, we find ourselves at a loss till we come to the very end of last century, and even then the details are but meagre till we are well advanced into this century. It is true that quite at the close of the eighteenth century Mr. Mundy had a dog called Wonder, but this must have been a case of adult baptism, and the owner cannot have had the fear of the fines and penalties exacted by the keeper of the stud-book before his eyes. The dog was indeed a wonderful performer, and his blood in great fulness runs in all strains of the successful dogs of the present day. He was a grandson of a bitch belonging to King George III. Royalty is also still represented as widely by the descendants of a dog which belonged to

Princess Charlotte. They have in course of time combined with those of her royal grandfather's dog. It is believed that the blood of the Archbishop of York's black and white dog runs in the strain of the famous Bab at the Bowster, the best dog of modern days: a veritable mother in Israel, for there are probably few first-class dogs who cannot boast of being her descendants.

The first name which is handed down to fame is Lord Orford's Czarina. She was a wonderful bitch. She won forty-seven matches. Those were the days of match-making, when each owner vied in friendly rivalry with others of the same club. Stakes, as we have them, were scarcely known. This Czarina never was beaten.

Considering the length of courses in the old Swaffham Club, to which Lord Orford belonged, this was an exploit which means more than catches the eye at first sight. It is stated that she never bred till she was thirteen years old : a statement which savours of the mythical, for it is douhtful whether any greyhound has ever bred at that age in modern days. Certainly they have not bred anything good, whereas her progeny, Claret and Vengeance, were at the top of the tree. Lord Orford rode out to see her win her last match. The excitement caused by her victory was too much for him : he dropped off his pony and died. This happened in 1791.

Her grandson Snowball was even more celebrated. He found his "vates sacer" in Sir Walter Scott, a genuine sportsman, who entered heartily into the mysteries of a course, and from his famous lines ("'Twas when fleet Snowball's head was waxen grey") we can picture to ourselves the turns and doubles and wrenches, the struggle to reach the covert, the effort to take to the hill, and the fatal gap. Apart from this performance of Snowball in his old age, we have no record of his triumphs, but it is true, as Scott has it, that his race was triumphant in England and Scotland "o'er each meaner stamp." The date of his birth was about 1796. Mention has already been made of Wonder, who was born about two years later. He, possibly, was a dog of still greater excellence, but he lacked the necessary chronicler. However, he established the fame of "Mr. Mundy's breed." In those days each owner of a kennel jealously guarded the secrets of his harem, and all that transpired was that a dog was of such or such a breed. Mr. Mundy, Mr. Topham, Lord Stradbroke, Lord Rivers, Mr. Lloyd, Mr. Swan, Mr. Best, Mr. Hassall, Mr. Swinfen, and many others established a name for their blood, rather than for any particular dog ; but we can trace the union of the Snowball with the Wonder strains with excellent effect in Moorcock, Romp, Tiger, Tippoo and a younger Snowball. Mr. Hassall's Harold, one of the unbeaten heroes, was of this strain. About this time Mr. Goodlake's kennel was greatly in the ascendant, and its bright particular star was Gohanna. Mr. Goodlake was an enthusiastic courser : and it was possibly from a pardonable desire to embalm the "glories" of his breed that he undertook the compilation of the first stud-book, from which we now draw almost our only information. After a few years he evidently found the labour too great, and owners were so jealous of their breed that many years afterwards Thacker apologised for mistakes he had made by saying he would not venture on the impertinence of writing to the owners for information. The stud-book was discontinued, and a blank of about ten years follows, when Thacker started one on a larger scale : a work which under various forms has been carried on to the present day. Waterloo was the hero at that time. He was a dog of a peculiar colour, which varied so that sometimes he was described as dun and white, sometimes fawn and white, and sometimes brindled and white. Lord Eglinton bred him and challenged All England with him. Mr. Goodlake took up the challenge with his very good dog Gracchus. It was run off at Ashdown Park, where the hares are famous for their stoutness, and Waterloo won easily. In connection with his colour, in his letter of challenge, Lord Eglinton names his dog Waterloo, but excuses himself from giving his colour because of its well-known peculiarity. The blood of Waterloo still runs in the great family of Beacon and Scotland Yet, as well as in those which claim Fusilier as their ancestor.

With reference to this challenge, it may be remarked that more than once there was a challenge stake run off at Ashdown between North and South. Lord Sefton, Mr. Graham, Mr. Borron, the Listers, Mr. John Jardine were the chief representatives of the North, while Mr. Randell generalled the South, and was ever in the front himself. Stonehenge, in his book on *The Greyhound*, gives an account of several breeds—the Newmarket, Wiltshire, Lancashire, Scotch, and Yorkshire varieties—and no doubt in those days there was a distinct difference owing to the different style of coursing. At Newmarket and Swaffham and in Wiltshire, courses of from two to four miles were not rare. On the plains of Altcar a few hundred yards was the limit. In Scotland the running was more on the hill than in the vale, while in the northern counties the country was enclosed, and fallow or growing corn more often met with than grass, and then always in ridges. The want of communication and the jealousy of rival breeders helped the great law of the survival of the fittest. But just at this time Captain Daintree placed his grand dog, King Cob, at the service of the public. He was essentially a Newmarket dog. Strange to say Lord Stradbroke, who was a great supporter of Newmarket coursing, considered that the use of King Cob had poisoned his breed, and was glad to get rid of the produce. In this way Mr. Sharpe, of Hoddom, obtained his celebrated Queen of the May, and was rewarded by winning the Waterloo Cup with her son Hughie Graham. Soon after Mr. Sharp had got her, Will Nightingale was judging in Scotland. He was singing the praises of King Cob's stock, and some one told him that there was a King Cob puppy entered at the meeting. He laughed at the idea of a King Cob puppy being found so far north, but the moment he saw her run he called out, "That's a King Cob." The enterprise of Mr. James Hedley, the father of our famous judge, took Matilda Gillespie to King Cob from the border of Northumberland, and was rewarded by The Tollwife, who laid the foundation of Mr. John Jardine's unequalled successes. These

two daughters of King Cob now live in the almost universal progeny of Bab at the Bowster, and that distinguished family of Ptarmigan and Gallant Foe, which was the glory of Northumberland and the champion race at Altcar. A year or two afterwards Sir James Boswell bred Jason, who was very successful both in the field and at the stud, notably with his son Vraye Foy, who again, through Egypt and Lopez, is represented by most of the first-class dogs of the day, another line of Jason being found in Herschel's pedigree. This, with The Czar, is characterised by Stonehenge as the "bulldog cross"; but Captain Daintree held that there was a bulldog strain also in King Cob, which makes it common to all greyhounds. About the same time appeared Mr. Sharpe's Monarch, whose dam was bought from a tramp. The bitch must have shown great quality and General Sharpe must have been a rare good judge, for her son has left his mark on the stud-book to the present day. And now we come to sound ground, for we have the bead roll of the winners of the Waterloo Cup to guide us and tell us something of the performances of those dogs whose fame still lives in coursing annals. And it is worthy of remark that though the Waterloo Cup began in a very small way by being only an eight-dog stake, and in its second year a sixteen-dog stake, and in its third, one for thirty-two dogs, yet the second and third winners and probably the first are still successful in their progeny, as they themselves were in their flesh, not only over the plains of Altcar, but all over the coursing world. The strains of Blue Bugle and of Emperor are still among the most cherished, sometimes perhaps unconsciously, by breeders of the present day. Emperor, indeed, failed himself in the deciding course, being beaten by a kennel companion, but two of his sons revenged his defeat, and his other successful descendants are legion. As Lord Sefton was the founder of the Altcar Club, as he brought in the best blood from North and South to improve the native greyhounds, it was but fitting and fortunate, not only that his bitch Milanie should head the list, but that in Senate we should have one of the most valuable lines in every modern pedigree. It is not without reason that the term "fortunate" is used. His father and mother were as well bred as could be, but perhaps not coming up to the Lancashire ideal of the trainer, that ideal being a sprinter, he was about to put them down, when the bitch came in season, and they were respited till the puppies were weaned. The produce was Oliver Twist, Senate, and Eastham. Contemporary with Senate in the North was Figaro at Newmarket, a son of King Cob; somewhat unfortunate himself, as was his sire, but the father of a host of dogs of the finest stamp. Among them were Mocking Bird, one of the handsomest bitches seen, Bedlamite, and Boreas. It may be noted here that all the progeny of Bedlamite were without exception black, while those of Boreas were of all colours. Weapon, Lablache, Gamechicken, Hurkaru, Music Master, and a host of others, including sisters of Mocking Bird, still testify to the permanent value of the merits of Figaro. Bedlamite was a small dog of 58 lbs. weight, but full of quality; his stoutness and cleverness were undeniable. He naturally became the favourite sire, especially in the South; but his blood survives to-day chiefly through Hopmarket, a daughter of the famous Cerito, and through Randell's wonderful bitch Riot, who was the grandmother of another public favourite in Mr. Haywood's Rebe. Riot was mated with the best dogs of the day, but her most successful son was Regan, the sire of Rebe by Barrator, himself a most extraordinary dog. Though he failed to have his name inscribed in the roll of successful dogs in the Waterloo contest, yet his style pleased the eye of all good judges; but what attracted most notice was the complete command which his master had of him. At a word he would lie down and take not the slightest notice of a hare passing close to him, or he would play at leapfrog with his master, or he would fly at and worry a man. Bedlamite's rival in the South was David, doubly a descendant of King Cob (but not through Figaro), and a grandson of Senate. It may be the combination of the Northern with the Southern race which eventually gave his family the pre-eminence; be that as it may, there is scarcely a pedigree of note which has not the name of David in it. The union of Bedlamite, through The Brewer, with Glimpse at Glory, a daughter of David, produced Gaudy Poll and a number of winners of the first class in the South.

Bedlamite was put to Flounce and produced Jacobite, probably the fastest dog of his day, but a very wide worker. Old coursers still talk of Jacobite, and of Belligerent, a grandson of Weapon, a few years later as showing most wonderful speed. But while the line of Mr. Brundrit's dog has died out, that of Jacobite survives in the numerous families of Cardinal York, Picton, Forster's Meg, whose son Kingwater almost rivalled his sire in pace, and the great family of Lord Haddington's, which at one time swept the board.

The next which attracts attention is Cerito, one who ranks with Master M'Grath and Fullerton as thrice winner of the Waterloo Cup. In her case the Cup was only for thirty-two dogs. But when she was beaten in her second attempt, she succeeded in running up for the Altcar Stakes. She left one descendant, Hopmarket by Bedlamite. The family of Hopmarket by her union with Sharpe's fast dog Larriston, promised to carry all before them, but it has nearly dropped out of the front rank, the produce of Bit of Fashion, a most successful bitch, being the most conspicuous; but with the physical failure of Fullerton, the comparative failure of Young Fullerton, and the more complete failure of the

rest, this family seems on the verge of extinction. It is worthy of remark that these three great winners, Cerito, Master M'Grath, and Fullerton, have all been more or less failures at the stud; while those who stand next in rank, Coomassie and Miss Glendyne, as dual winners, have met with no more success. Sackcloth, who followed Cerito, deserves more than a passing notice. Not only did he belong to Lord Sefton, but he had been to Amesbury, where he had won three courses in the beginning of February: then to Ashdown, where he won a fourteen-dog stake three weeks later, and the week after he won the Waterloo Cup: truly a magnificent performance and an undeniable proof of stoutness. The judgment of Lord Haddington, then Lord Binning, in breeding from him was properly rewarded in giving him a succession of winners, whose performances it was a pleasure to watch. Through Sackcloth and through Patent the line of Foremost, once a successful rival at the stud to Figaro, chiefly now exists; but the success of Greentick, their greatest descendant, spreads it far and wide. Larriston, a very fast dog by Mr. Sharpe's famous Liddesdale, ran up to him. Larriston was successfully mated with Hopmarket, and also with Mr. Hayward's Hopbine. The produce of the latter union was Rackety Hoppicker, the founder of Haywood's great successes, a strain not likely to die out, as it permeates all breeds. And now we come to the two last of the Waterloo Cups limited to thirty-two dogs, when Judge beat Scotland Yet, and Protest beat Judge, and Blackcloud won the Altcar Stakes a collection of great names. No finer dog than Judge ever won the Waterloo Cup, and it is pleasing to remember that he won it for Sir Thomas Brocklebank, the best, the most respected, and almost the oldest supporter of the sport. Judge was most successful at the stud, and the cross between Canaradzo, a son of Scotland Yet, the runner-up, and daughters of Judge was as much sought after as that between Herschel and Greentick in the present day. Scotland Yet was the sweetest of runners. She was a great favourite of Will Nightingale. It is said that in her last course he took off his cap (he could not see her beaten), and whispered to her trainer: "Draw her, Jimmy, draw her; she is not running to her form." She was of a beautiful shape, white, with a small patch of brindle. Most of her family took after her and introduced the white and brindled colour, which was for a long time the winning colour in the North.

The coming of this family was a distinct era in the history of the greyhound. They all had the same style of going; starting slowly, they stole along with the smoothest of action, and as they neared the hare they shot out and pressed it from the first with determined efforts to kill, but never throwing themselves out: a very winning and a very pretty style. Their stoutness was not a strong point, though Coorooran, one of the family, was noted for his lasting qualities in the old Dirleton country, where the hares were of the strongest, and a three-legged hare was known to try the mettle of the best of them. They were good killers and so, as a rule, made short courses. The family consisted of Canaradzo, who won the Waterloo Cup and was sire of King Death, who also won it and the Plate as well, Coorooran, Seafoam, Bugle, Dalgig, and Canopy, besides others who bred nothing of consequence. Seafoam was the sire of Lobelia, and Bugle the grandsire of Seacove, also Waterloo Cup winners. King Death was the sire of Cock Robin, who ran up to Master M'Grath, and of Chameleon, who was thought by some to have been the best bitch of modern days over the Altcar ground. Her two long undecideds with Gone, in Peasant Boy's second year, were recognised as an abuse of the power of the judge, and led to a change in that department. Cock Robin was grandsire of Misterton, and Chameleon the dam of Commerce, who had the worst of the scrimmage for the Waterloo Cup of 1879. Canaradzo is also represented in the descendants of Ptarmigan; Mr. Fawcett's splendid family from Fair Future have several strains of Canaradzo apart from one of King Death; Herschel has a line of Coorooran, and probably there are few winners who have not some of the family blood in them through Contango as well as other lines.

We have somewhat outrun our subject in treating of this great family. In 1857 the Waterloo Cup became a sixty-four dog stake. King Lear, a very elegant white dog with a little fawn about him, won it, and David ran up for the Purse. King Lear was scarcely a success at the stud; still, he was the ancestor of Muriel, and still lives in the stout-hearted breed of Sir Robert Jardine. Of David it is scarcely necessary to say much. In the South his stock carried all before them; in the North, if his puppies were not so successful in the first generation, they have happily combined with the strains of the country, and he takes rank with Canaradzo, Judge, Figaro, and their congeners as indispensable in a pedigree of the first class. Patent was probably his most successful son in the field and also at the stud, but now he is not so often met with as other sons, though in fact his blood appears in the pedigree of Greentick, whose great grandam Merrywife was by David his sire, out of Henrietta by Regan out of Lady Clara his dam, the grand lines of Barrator and Riot being thus thrown in.

The following years seem to have produced no dogs which live in our memory, though Lady Watford, the grandmother of both Brigadier and Master M'Grath, and Java the grandam of Bed of Stone and Gaudy Poll, were among the unsuccessful competitors of the Waterloo Cup. We then come to the era of Canaradzo and his

family, the praises of which have already been sung, soon followed by the success of his son, King Death. That sterling good bitch, Rebe, showed her quality by twice running up for the Cup and dividing the Purse ; foreshadowing the even more excellent performance of Bed of Stone in winning successively the Purse, the Plate, and the Cup. And now comes a time when, for a few years, the form of the greyhound of the day was absolutely of the highest class. We will take the Waterloo contest of 1867. In the last eight of that year we find Master M'Grath, Lobelia, Brigade, Cock Robin, Charming May, and Patent Lever, Bab at the Bowster having been beaten by Lobelia the preceding round after an undecided. Each of these was equal to winning the Cup with the necessary luck. The next year the names of Bacchante and Cataclysm and that of Lady Lyons, the sensational conqueror of Master M'Grath, swell the list, and this period, this Augustan age, seems to end in a display of rockets in the shape of Bendimere, Cavalier, Waywarden, Cyclone, and that extraordinary bitch, Bed of Stone, who, through her one solitary son Bedfellow, has stamped successive generations with her hall-mark. Chameleon in the following year kept up the reputation of her parents King Death and Chloe, both being winners of the Cup in their day ; and the name of Smuggler appears, whose excellence, not appreciated at that time by Warwick, re-appeared as a halo of glory around that princess of her kind, the charming Miss Glendyne. Still the quality of the competitors seems to have died away from that time. Here and there a name appears which we mention with the greatest respect ; as, for instance, Gallant Foe, whose defeat afforded one of those rare instances when the crowd differed from Mr. Hedley ; Contango, that sire of sires, the worthy mate of Bed of Stone, being the son of Bab at the Bowster, perhaps the best greyhound of modern days ; Lord Glendyne, the grandsire of Miss Glendyne ; that sensational bitch Coomassie, possibly the smallest and the smartest winner of the Cup, whose pedigree unfortunately must for ever remain unknown ; Misterton, the winner of the Cup in a memorable year when on the second day the courses were run with two or three inches of snow on the ground, fatal in many cases to the fastest dog from the hare doubling back : the conqueror in a scrimmage, not a trial : the sire of the largest number of winners, and yet a strain to be avoided ; Princess Dagmar, one of the famous Ptarmigan and Gallant Foe family ; Snowflight, whose victory and defeat alike were full of incident. But few of these appeal to our memories as quite of the class of that wonderful time about five-and-twenty years ago. Not even Greentick, sterling and honest and unlucky greyhound as he was, the premier of stud dogs, quite fulfils our ideal. It is not till we remember the exquisitely finished style of Miss Glendyne, and the resolute manner of Herschel, who would never be denied, that we have good grounds for not despairing of the quality of the breed. It was a thousand pities that a broken toe prevented Miss Glendyne from meeting Herschel, when we might have been treated to such another display as the never-to-be-forgotten struggle between Master M'Grath and Bab at the Bowster. It is true that Bit of Fashion divided the honour of her first Cup with Miss Glendyne, but in the opinion of most the one owed her forward position to good fortune, the other to merit. They were both by Paris, a brother of Princess Dagmar, and one of that brilliant family of Ptarmigan and Gallant Foe, which for a while had the monopoly of the Waterloo Cup as Herschel has now. Bit of Fashion has earned a higher fame in being the dam of Fullerton, who stands pre-eminent among dogs as the winner or divider of four Cups, as much an idol of the public as Master M'Grath, and probably of the same class, as their owners carefully declined to subject them to that test of stoutness which appeals to every courser's heart, however much he may admire the speed which brings a dog first to the hare and the carefulness which keeps him in his place. The victories of Texture and Thoughtless Beauty produced two sterling good greyhounds, but there was in each case a slight flavour of luck which prevents them from taking the highest place unchallenged by the carping critic. Fabulous Fortune and his family promise to rival that of Ptarmigan and Gallant Foe, and yet in their case health or condition have shown them in such different colours that, much as we must admire their cleverness, their honesty and their resolution, they seem to bring the qualification of constitution into more prominence when we treat of the requirements of a greyhound of the first class.

There are so many varying circumstances which attend the success or failure of a dog that mere success in the field cannot be received as decisive evidence ; there must be an appeal for a new trial. A case in point is furnished by Mineral Water and Greentick. Twice they met ; twice did Mineral Water receive the verdict. At Gosforth the judge overruled the jury ; but an appeal to the stud book and the calendar leaves no doubt as to the merits of each dog. Mineral Water scarcely survives in any kennel but that of Sir Thomas Brocklebank, while Greentick has founded a dynasty.

Accepting the fact of a dog having transmitted his excellence to his posterity as a necessary confirmation of the verdict of the judge, and applying this criterion in examining into the claims of the dogs named in the foregoing pages, we must allow that, with one or two exceptions, they have all established their right to a place in the Valhalla of greyhounds.

Even this must be received with some reser-

vation, for the union of a dog with a certain bitch may have met with phenomenal success, while his failure with others may have been just as striking. Witness the produce of Beacon and Scotland Yet, Ptarmigan and Gallant Foe. But with bitches it is altogether different. From circumstances beyond control, a bitch may not have been mated with the right dog, or the produce may have died, or she herself may have been short-lived; while during her running career she herself may have not been able to take part in the great contests of the season. Riot and Prizeflower, and perhaps Carlton may be cited as instances of the latter kind; while Cerito and Bed of Stone left behind them only one representative each in Hopmarket and Bedfellow—produce which alone were enough to place their parents in the highest class.

Most of these dogs had their characteristics and peculiarities. Fullerton comes first as the winner and divider in four consecutive contests for the Cup. He was certainly a fast dog, though his brother Simonian could always lead him; but among a crowd of mediocrities he stood forth as a giant. He was brimful of wisdom. With a competitor of the same class it might have been to his disadvantage; as it was, he expended it on the handling of the hare, which was a treat to see.

Master M'Grath comes next as the winner of three Cups. A small, shabby dog, called by some the Irish-terrier, he went like a bolt out of the slips, was as quick as a cat on his feet, and always dashing for a kill, which he seldom missed.

We will pass by Coomassie, probably the smallest winner ever recorded, as quick as lightning with the hare, and a deadly killer, an art said to have been brought to perfection by practice in killing rabbits on a farm, for she seems to have failed in stamping her quality on her progeny. And we come to Miss Glendyne, by some thought to have been the finest greyhound of modern days, good all round; and if she had not broken a toe it is more than possible that she might have kept the Cup at Shortflatt Tower till her nephew was ready to take her place. Then, passing over the family of Ptarmigan and Gallant Foe—viz., Paris, Palmbloom, Pathfinder, Peter, Prenez Garde, Princess Dagmar, Jester, and others, of whom it may be said that they were all big, fine, slashing dogs, carrying a good deal of flesh, with plenty of pace and cleverness, and not too fond of following their game if they could not kill—we take a great stride backwards to Canaradzo and his family, passing by the way that good hard dog Cauld Kail, a lightly made, wiry animal who could run in every country, but more especially on the hills, where he always managed to get the upper side, and if the hare disappeared over a knoll he ran all the harder to catch sight again, an intelligence he inherited from his famous grandam, Ladylike. This family of Beacon and Scotland Yet comprised Canaradzo, Coorooran, Canopy, Seafoam, Seapink, Bugle, and some others. They all had a peculiar style of stealing away with the smoothest of action, seemingly making a race of it with their opponent, but drawing out at the finish, rattling the hare about viciously, and quickly killing at a long shot.

The sire of Seacove, Strange Idea, deserves some mention. Seacove was a granddaughter of Bugle, brother of Canaradzo, with all the cleverness of the family but not the colour. Strange Idea was one of the winning produce of High Idea; fast and clever, with a peculiar manner of wearing their hares, which ran up points very effectively, they were yet always more dangerous to meet at the beginning than the end of a stake. And lastly, we come to Herschel, only half a winner, to the regret of all who respected his owner and felt what a tower of strength he presented to coursing in the light of a relaxation, not a business, to the genuine sportsman. Gladly would he have been hailed as the holder of the long-coveted prize, and quite as enthusiastically would the dog himself have been cheered on his complete victory. However, it was not to be. Misfortune followed him the following years, and he retired to the stud, where, if quality of produce be the test, he stands *facile princeps* in the pages of the calendar.

Some of the bitches who have been winners have been mentioned incidentally, but Bab at the Bowster deserves a second notice. Probably the best greyhound of modern days, she proved her excellence in all countries, over the plains of Altcar, on the hills of Lanarkshire, with the stout hares of Southport, and set her seal on her claim of precedence by producing Contango, Banrigh, The Admirable Crichton, and a number of others, whose blood runs in the veins of every successful greyhound of these days. The peculiar merits of Riot also should not be overlooked, especially in these later times, when the owner of Master M'Grath set the fashion of keeping his dog for one contest only in the season, an unsatisfactory proceeding, to put it in the mildest way, followed by the trainer of Fullerton. The record of Riot, on the contrary, shows us that she was running every fortnight or three weeks, weather permitting, for three seasons, giving a total of 84 courses run, of which she won 74, a fitting moral wherewith to end this dissertation on the celebrities of the stud-book. But perhaps a short account of two most exciting courses within the last thirty years may furnish a tail-piece of greater interest. The first of these two memorable courses was that between Herschel and Fullerton in 1889, in the last tie but one. What with a wet season, and water standing in pools, the hares were running very badly, only three or four hares escaping in the three days. Fullerton had the reputation of being a bad killer at home, but

with the weak hares he took his share in the deaths. The courses, and especially his, seemed to be very short, so he was very fresh for his fifth course. Herschel, on the contrary, was lamed in his very first course; and on the second day, for his fourth course, he ran a hare single-handed from the Withins to Gore House Wood, and in coming back he got on two fresh hares, and ran them till he lay down exhausted. As a natural consequence, the next day he started very stiff from the slips, and Fullerton led him by three lengths, and put in three or four wrenches. Herschel then exchanged, and put Fullerton in possession, and then by a magnificent effort forced himself past, fairly took the hare away from him, wrenched two or three times strongly, seeming to leave Fullerton, and unfortunately killed.

The excitement of seeing the old dog, stiff and lame, fairly take the hare from the young and fresh puppy was intense, and many thought it was the finest performance of a brilliant career.

The other course was one which roused the feelings of the onlookers to a still greater extent. It was the deciding course for the Cup in 1869, fought out between Master M'Grath and Bab at the Bowster. The course was run on the farthest of the Hill House meadows, which is bounded by the road leading to the Withins. The crowd was standing on the embankment, the hare coming straight to them. A little knot of spectators was placed broadside on, near the road. The hare was driven from the other side of the main road, a beat which usually affords good hares. The slip was a perfect one, worthy of Tom Raper, that prince of slippers. Master M'Grath began as usual to draw out, but in a long straight run, parallel with the ditch, Bab at the Bowster gradually collared him, and as they neared the bridge a cry from that little band on the road arose, "The bitch leads!" and leading she was by half a length when the hare took the bridge. This was fatal to her; she had to go round, while Master M'Grath, with his wonderful quickness, was across the ditch on the inside like a flash. The hare doubled right back, and then there followed a long series of the quickest of exchanges, a treat indeed to see, when Master M'Grath, nearly at the place they had started from, drew out and made one of his dashing kills. Every one felt convinced that they had then seen the finest pair contest the final for the Cup in the finest style which it was ever likely for them to behold. The winners in these two courses undeniably stand out as the most successful in the contests for the Cup, and yet they both have turned out worthless at the stud, while the losers have distinctly conferred on the whole race of greyhounds those qualities which we all desire to see and strive after; the qualities whose praises have been sung in the foregoing pages with, it is to be feared, wearisome iteration, but certainly with heartfelt appreciation. No doubt not only pace but special quickness with the hare are called for at Altcar more than anywhere else. Master M'Grath and, we may add, Fullerton were dogs of this character, a shade above the dog-racing of the enclosures. But any one who has had the pleasure of seeing the coursing at Altcar at club meetings of late years will feel that stoutness and true running are absolutely necessary for success, and as the hare leads them a far from merry dance, the owners of the cracks must sigh in vain for the deadly jaws of the Canaradzo tribe.

W. Ellis.

GLOSSARY.

Brace—A pair of greyhounds.

Bye—A course in which, owing to the withdrawal of its opponent, or to an odd number at the bottom of the stake, a greyhound has no one to meet. The first class of bye is called *accidental*, the second *natural*.

Collars—When two greyhounds of the same colour are coursing they are ordered to wear a red and a white collar respectively, the red being on the left and denoting the upper dog on the card.

Cote—An old coursing term, signifying that when two dogs start together, and one outruns the other and turns or wrenches, it be allowed two points, or three points if the hare be bent on the outer circle.

Division—When two or more greyhounds left in a stake divide either by mutual arrangement on the part of the owners, or compulsorily through bad weather or scarcity of hares.

Draw—Of the owner; to withdraw a dog. Also the classifying of the greyhounds prior to the running for a stake.

Enter—Of the trainer; to show the young dog its game for the first time, and to prepare it for coursing.

Exchanging—Of the greyhound; when the dogs alternately move the hare from her course, they exchange points.

Fence—Of the greyhound; the act of leaping over a fence or other obstacle.

Fewterer—The old term for *slipper* (q.v.)

Flag Steward—The official responsible for signalling the judge's decision, after a course.

Fleck—Of the greyhound; to snatch the hare and lose hold.

Form—The resting place of a hare.

Gaze-hound—The old term for hounds only able to follow game by sight, which were probably the ancestors, in large measure, of the modern greyhound.

Go-by—The starting of a greyhound a clear length behind his opponent, passing him in a straight run, and obtaining a clear length's lead.

Guarding—When two or more greyhounds are entered in a stake, the *bona fide* property of the same owner, the order of running is altered, so that they may meet other greyhounds, should they come together.

Hare Bearing—Favouring one of the greyhounds, after the slip. In Queen Elizabeth's time the term signified a go-by.

Home—A refuge for hares.

Law—The amount of space a hare is allowed to run after being put up before the hounds are slipped. In Queen Elizabeth's time the nominal distance was twelve score yards, but since the country has become more cut up, from sixty to eighty yards is the rule.

Leash—(1) The line used to retain the dogs until the order comes for slipping.

(2) Sometimes used as a term defining the whole practice and pursuit of coursing.

Long Dogs—An old term for greyhounds.

Lurching—Of the greyhound; running cunning, and leaving the most part of the work to its opponent.

Meuse or Muse, or Musit—(2) and (3) are obsolete. Gaps in the hedge through which the hare can escape.

Mob—To press a hare unfairly by the crowd.

National Coursing Club—The governing body of the sport, founded in 1858. In that year they drew up a code of rules, which, very slightly altered, is now almost universally observed.

No Course—A course which, owing to accident, or to shortness of duration, gives the judge no opportunity of deciding the comparative merits of the dogs.

Ns—An abbreviation of the word "names," indicating that a greyhound is entered by other than its registered owner.

Pot-hunting—Coursing in which the object is not to test the relative merits of dogs and game, or of dog and dog, but simply and solely to kill the hare.

Produce Stakes—A collection of puppies, usually entered before the commencement of the running season.

Puppy—A greyhound whelped on or after the 1st of January, of the year preceding the commencement of the season of running. See also *sapling*.

Rick—Old term for *wrench* (q.v.)

Sapling—A greyhound whelped on or after the 1st of January of the same year in which the season of running commenced.

Serving—Of the greyhound; when a dog turns his hare, and keeps his place for another turn, he serves himself; or, losing his place, serves his opponent.

Slipper—The official entrusted with the task of letting the dogs go when they have both fairly sighted the hare.

Slip Steward—The official responsible for greyhounds going to slips within the proper time.

Slips—The couples by which the two dogs are held whilst the hare is put up.

So-ho—The cry used to indicate a sitting hare.

Stud Book—The official registry of running and breeding greyhounds.

Trip—An unsuccessful effort to kill, which throws the hare off her legs, or the getting so close to the hare as to *fleck* (q.v.) her.

Turn—A sharp change of not less than a right angle in the hare's course when pressed by a dog.

Undecided Course—A course in which the number of points scored by the greyhounds is considered by the judge to be equal.

Unsighted, To be—Of the greyhound; to lose sight of the hare, either when slipped, or at any part of the course.

Waiting—Of the greyhound; lying behind an opponent, and never making an effort to get near the hare; in other words, waiting a chance to kill.

Wrench—A change of less than a right angle in a hare's course when pressed.

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CRICKET—Wherever Englishmen plant the Union Jack they are sure to set up the wickets as well. Other European nations have never taken kindly to the game, but the natives of many of the lands we have occupied have soon learned to appreciate its merits. In Samoa legislation has interfered to limit the pursuit of the game; in Fiji it is thoroughly acclimatised; some years ago a team of Australian aborigines—not in any way to be confounded with the crack Colonial elevens—visited England; a Zulu is said to be one of the best bowlers in South Africa; the Parsees of India have sent—and are eager to send once more—a team to try conclusions with us; and, finally, the crack bat of 1896 was an Indian prince. It is needless to add that Englishmen settled abroad have in no way shown themselves more English than in their enthusiasm for the national game, and the Australians in particular have proved that they are well able, if not to beat the best English sides, at least to make the most imperative demands on all their skill and resource.

The original popularity of the game was no doubt due to the amateurs who devoted themselves to its practice and extension; but it was only natural in the process of events that another class should spring up, consisting of men who have a large ability for the game, but neither the spare time nor the spare money necessary for its cultivation; and, as the keenness between counties and clubs increased, the paid services of this class were enlisted, till professional cricketers became the backbone of the game; and it is not too much to say that thousands of men are now earning a livelihood by means of cricket.

The Cricket Ground—The first requisite for the game is a place to play it on—a smooth and level sheet of grass. The match-inclosure varies in size, eight acres making a large ground and four acres a very small one; the shape is immaterial, though a circle, oval, square, or a broad oblong is the best; a long narrow strip is not very suitable. The turf requires most careful tendance, and should be firm and close, but not too close: coarse grass makes a very poor ground, and a spongy turf, with thick matted grass-roots, is not satisfactory. To keep the turf in order incessant rolling and mowing are necessary throughout the summer and early spring; weeds of every kind must be carefully eradicated, and the holes and bare places caused by the wear and tear of the game should be filled

up as soon as a match is over. A well-appointed ground should be provided with two rollers, a heavy one of, say, about a ton or a ton and a half, and a lighter one of from 10 to 15 cwt.; the heavy one is for use when the ground is hard, and in the early spring, when the turf is soft but dry; on saturated turf a heavy roller is worse than useless, as it squeezes up the moisture to the surface. It is of course essential that a man should be kept whose business it is to look after the turf, the ground, and its accessories. The chief of these last is the pavilion, which should contain a members' room (large enough to hold a table at which at least twenty-five can have lunch at once), from which the game can be watched. Two dressing-rooms are also necessary, with lavatory accommodation. A bath is a pleasant luxury, but not a necessity. In front of the pavilion should be an inclosure, reserved for players, members, and their friends, while, in large clubs, seats are often provided on the pavilion roof. A private room should be reserved for the scorers, either in the pavilion or on some other part of the ground whence a perfect view of the game can be obtained, and special provision should be made for the "press" on any ground where first-class matches are likely to be played. Finally, the pavilion should, when possible, be built behind the line of the wickets. Two white screens should be provided, to be set up behind the bowler's arm so as to give the batsman a good sight of the ball; if these are made of wood and set on wheels, they can be shifted about when necessary; in this case they may be about 20 ft. long by 12 or 15 ft. high. If the screens are of canvas and re-erected for each match, 30 ft. would hardly be too long. Seats should be provided for the spectators, who are never allowed to intrude on the match-inclosure during the progress of the game. Water must be laid on, to be used in the preparation of the wicket, to which it is conducted by a long hose. A good lawn-mower is also essential, and a "telegraph," *i.e.*, a black board raised on a stand, to which white figures can be attached to show the progress of the game, which is done in three lines of figures; thus

75
3
19

would indicate in the top line that the batting side had scored in all 75 "runs," in the second that 3 men were "out," in the third that the last man "out" had scored 19 "runs." Two such boards are useful on a large ground, but one must always be close to the scorer's room or box. The figures on the top line are altered whenever ten runs are made, except when a man is "out", when the exact aggregate is posted. On large grounds a more elaborate system of "telegraphing" is adopted, and it may be added that the Australian system is somewhat different from the English, as the full score of each man and the analysis of the bowling is shown. At the side of the match-inclosure, part of the turf should be reserved for practice, and should be as carefully tended as the inclosure itself. Nets, the higher the better, are required for practice, and two long white coats should be provided for the umpires.

Paraphernalia—The cricketer's costume consists of trousers of white flannel (or serge, as less liable to shrink when washed), white shirt, and boots; the coat and cap are generally of flannel, and show the colours of the club to which he belongs; the boots are of white buck-skin, or brown leather, with thick soles well studded with hobnails or set with spikes, to prevent him from slipping; in cold or wet weather a thick, knitted jersey—known as a "sweater"—is worn over the shirt. The chief implement which he carries about with him is his bat, as the ball and "stumps" are provided at the ground where the match is played, but for protection he requires "pads" (*i.e.*, padded guards for the legs), and gloves with the fingers backed with india-rubber to protect his hands. Thick socks prevent the feet from getting sore when the ground is hard. All these, together with his "flannels," should be carried in one of the bags made for the purpose. It is well to take two bats to a match in case one should break, and the wise man will also carry such odds and ends as scissors, sticking plaster, a roll of adhesive bandage, extra socks, handkerchiefs, shoe-laces, &c., in case of accident.

The Laws of Cricket—The Marylebone Cricket Club, with its headquarters at Lord's Ground, St. John's Wood, is the supreme legislative assembly as regards Cricket, and it is to the M.C.C. that cricketers look for the revision and alteration of the laws when necessary. Those laws, as at present received, are as follows:—

THE LAWS OF CRICKET.

As Amended by the Marylebone Club, 1884, 1889, *and* 1894.

1. A match is played between two sides of eleven players each, unless otherwise agreed to; each side has two innings, taken alternately, except in the case provided for in Law 53. The choice of innings shall be decided by tossing.

2. The score shall be reckoned by runs. A run is scored:—

1st. So often as the batsmen after a hit, or at any time while the ball is in play, shall have crossed, and made good their ground, from end to end.

2nd. For penalties under Laws 16, 34, 41, and allowances under 44.

Any run or runs so scored shall be duly recorded by scorers appointed for the purpose. The side which scores the greatest number of runs wins the match. No match is won unless played out or given up, except in the case provided in Law 45.

3. Before the commencement of the match two umpires shall be appointed; one for each end.

4. The ball shall weigh not less than five ounces and a half, nor more than five ounces and three-quarters. It shall measure not less than nine inches nor more than nine inches and one-quarter in circumference. At the

beginning of each innings either side may demand a new ball.

5. The bat shall not exceed four inches and one-quarter in the widest part; it shall not be more than thirty-eight inches in length.

6. The wickets shall be pitched opposite and parallel to each other at a distance of twenty-two yards. Each wicket shall be eight inches in width and consist of three stumps, with two bails upon the top. The stumps shall be of equal and sufficient size to prevent the ball from passing through, twenty-seven inches out of the ground. The bails shall be four inches in length, and when in position, on the top of the stumps, shall not project more than half an inch above them. The wickets shall not be changed during a match, unless the ground between them become unfit for play, and then only by consent of both sides.

7. The bowling crease shall be in a line with the stumps: six feet eight inches in length; the stumps in the centre; with a return crease at each end, at right angles behind the wicket.

8. The popping crease shall be marked four feet from the wicket, parallel to it, and be deemed unlimited in length.

9. The ground shall not be rolled, watered, covered, mown, or beaten during a match, except before the commencement of each innings and of each day's play, when, unless the in-side object, the ground shall be swept and rolled for not more than ten minutes. This shall not prevent the batsman from beating the ground with his bat, nor the batsman nor bowlers from using sawdust to obtain a proper foothold.

10. The ball must be bowled; if thrown or jerked the umpire shall call "No ball."

11. The bowler shall deliver the ball with one foot on the ground behind the bowling crease, and within the return crease, otherwise the umpire shall call "No ball."

12. If the bowler shall bowl the ball so high over or so wide of the wicket that in the opinion of the umpire it is not within reach of the striker, the umpire shall call "Wide ball."

13. The ball shall be bowled in overs of five balls from each wicket alternately. When five balls have been bowled, and the ball is finally settled in the bowler's or wicket-keeper's hands, the umpire shall call "Over." Neither a "no ball" nor a "wide ball" shall be reckoned as one of the "over."

14. The bowler shall be allowed to change ends as often as he pleases, provided only that he does not bowl two overs consecutively in one innings.

15. The bowler may require the batsman at the wicket from which he is bowling to stand on that side of it which he may direct.

16. The striker may hit a "no ball," and whatever runs result shall be added to his score; but he shall not be out from a "no ball" unless he be run out or break Laws 26, 27, 29, 30. All runs made from a "no ball" otherwise than from the bat, shall be scored "no balls," and if no run be made one run shall be added to that score. From a "wide ball" as many runs as are run shall be added to the score as "wide balls," and if no run be otherwise obtained one run shall be so added.

17. If the ball, not having been called "wide" or "no ball," pass the striker without touching his bat or person, and any runs be obtained, the umpire shall call "Bye;" but if the ball touch any part of the striker's person (hand excepted) and any run be obtained, the umpire shall call "Leg bye," such runs to be scored "byes" and "leg byes" respectively.

18. At the beginning of the match, and of each innings, the umpire at the bowler's wicket shall call "Play;" from that time no trial ball shall be allowed to any bowler on the ground between the wickets, and when one of the batsmen is out the use of the bat shall not be allowed to any person until the next batsman shall come in.

19. A batsman shall be held to be "out of his ground" unless his bat in hand or some part of his person be grounded within the line of the popping crease.

20. The wicket shall be held to be "down" when either of the bails is struck off, or, if both bails be off, when a stump is struck out of the ground.

The STRIKER is out—

21. If the wicket be bowled down, even if the ball first touch the striker's bat or person:—"Bowled."

22. Or, if the ball, from a stroke of the bat or hand, but not the wrist, be held before it touch the ground, although it be hugged to the body of the catcher:—"Caught."

23. Or, if in playing at the ball, provided it be not touched by the bat or hand, the striker be out of his ground, and the wicket be put down by the wicket-keeper with the ball or with hand or arm, with ball in hand:—"Stumped."

24. Or, if with any part of his person he stop the ball, which in the opinion of the umpire at the bowler's wicket shall have been pitched in a straight line from it to the striker's wicket and would have hit it:—"Leg before wicket."

25. Or, if in playing at the ball he hit down his wicket with his bat or any part of his person or dress:—"Hit wicket."

26. Or, if under pretence of running, or otherwise, either of the batsmen wilfully prevent a ball from being caught:—"Obstructing the field."

27. Or, if the ball be struck, or be stopped by any part of his person, and he wilfully strike it again, except it be done for the purpose of guarding his wicket, which he may do with his bat, or any part of his person, except his hands:—"Hit the ball twice."

Either BATSMAN is out—

28. If in running, or at any other time, while the ball is in play, he be out of his ground, and his wicket be struck down by the ball after touching any fieldsman, or by the hand or arm, with ball in hand of any fieldsman:—"Run out."

29. Or, if he touch with his hands or take up the ball while in play, unless at the request of the opposite side:—"Handled the ball."

30. Or, if he wilfully obstruct any fieldsman:—"Obstructing the field."

31. If the batsmen have crossed each other, he that runs for the wicket which is put down is out; if they have not crossed, he that has left the wicket which is put down is out.

32. The striker being caught no runs shall be scored. A batsman being run out, that run which was being attempted shall not be scored.

33. A batsman being out from any cause, the ball shall be "Dead."

34. If a ball in play cannot be found or recovered, any fieldsman may call "Lost ball," when the ball shall be "dead." Six runs shall be added to the score; but if more than six runs have been run before "Lost ball" has been called, as many runs as have been run shall be scored.

35. After the ball shall have been finally settled in the wicket-keeper's or bowler's hand, it shall be "dead"; but when the bowler is about to deliver the ball, if the batsman at his wicket be out of his ground before actual delivery, the said bowler may run him out; but if the bowler throw at that wicket and any run result, it shall be scored "No ball."

36. A batsman shall not retire from his wicket and return to it to complete his innings after another has been in, without the consent of the opposite side.

37. A substitute shall be allowed to field or run between wickets for any player who may during the match be incapacitated from illness or injury, but for no other reason, except with consent of the opposite side.

38. In all cases where a substitute shall be allowed, the consent of the opposite side shall be obtained as to the person to act as substitute, and the place in the field which he shall take.

39. In case any substitute shall be allowed to run between wickets, the striker may be run out if either he or his substitute be out of his ground. If the striker be out of his ground while the ball is in play, that wicket

which he has left may be put down and the striker given out, although the other batsman may have made good his ground at that end, and the striker and his substitute at the other end.

40. A batsman is liable to be out for any infringement of the laws by his substitute.

41. The fieldsman may stop the ball with any part of his person, but if he wilfully stop it otherwise, the ball shall be "dead," and five runs added to the score; whatever runs may have been made, five only shall be added.

42. The wicket-keeper shall stand behind the wicket. If he shall take the ball for the purpose of stumping before it has passed the wicket, or, if he shall incommode the striker, by any noise, or motion, or if any part of his person be over or before the wicket, the striker shall not be out, excepting under Laws 26, 27, 28, 29, and 30.

43. The umpires are sole judges of fair or unfair play, of the fitness of the ground, the weather, and the light for play; all disputes shall be determined by them, and if they disagree, the actual state of things shall continue.

44. They shall pitch fair wickets, arrange boundaries where necessary, and the allowances to be made for them, and change ends after each side has had one innings.

45. They shall allow two minutes for each striker to come in, and ten minutes between each innings. When they shall call "Play," the side refusing to play shall lose the match.

46. They shall not order a batsman out unless appealed to by the other side.

47. The umpire at the bowler's wicket shall be appealed to before the other umpire in all cases except those of stumping, hit wicket, run out at the striker's wicket, or arising out of Law 42, but in any case in which an umpire is unable to give a decision, he shall appeal to the other umpire, whose decision shall be final.

48A. If the umpire at the bowler's end be not satisfied of the absolute fairness of the delivery of any ball he shall call "No ball."

48B. The umpire shall take especial care to call "No ball" instantly upon delivery: "Wide ball" as soon as it shall have passed the striker.

49. If either batsman run a short run, the umpire shall call "One short," and the run shall not be scored.

50. After the umpire has called "Over" the ball is "dead," but an appeal may be made as to whether either batsman is out; such appeal, however, shall not be made after the delivery of the next ball, nor after any cessation of play.

51. No umpire shall be allowed to bet.

52. No umpire shall be changed during a match, unless with the consent of both sides, except in case of violation of Law 51; then either side may dismiss him.

53. The side which goes in second shall follow their innings if they have scored 120 runs less than the opposite side in a three days' match, or 80 runs in a two days' match.

54. On the last day of a match, or if a one day match, at any time, the in side shall be empowered to declare the innings at an end.

ONE DAY MATCHES.

1. The side which goes in second shall follow their innings if they have scored 60 runs less than the opposite side.

2. The match, unless played out, shall be decided by the first innings.

3. Prior to the commencement of a match it may be agreed that the over consist of 5 or 6 balls.

SINGLE WICKET.

The laws are, where they apply, the same as the above, with the following alterations and additions.

1. One wicket shall be pitched, as in Law 6, with a bowling stump opposite to it at a distance of twenty-two yards. The bowling crease shall be in a line with the bowling stump, and drawn according to Law 7.

2. Where there shall be less than five players on a side bounds shall be placed twenty-two yards each in a line from the off and leg stump.

3. The ball must be hit before the bounds to entitle the striker to a run, which run cannot be obtained unless he touch the bowling stump or crease in a line with his bat, or some part of his person, or go beyond them, and return to the popping crease.

4. When the striker shall hit the ball, one of his feet must be on the ground behind the popping crease, otherwise the umpire shall call "No hit," and no run shall be scored.

5. When there shall be less than five players on a side, neither byes, leg byes, nor overthrows shall be allowed, nor shall the striker be caught out behind the wicket, nor stumped.

6. The fieldsman must return the ball so that it shall cross the ground between the wicket and the bowling stump, or between the bowling stump and the bounds; the striker may run till the ball be so returned.

7. After the striker shall have made one run, if he start again he must touch the bowling stump or crease, and turn before the ball cross the ground, to entitle him to another.

8. The striker shall be entitled to three runs for lost ball, and the same number for ball wilfully stopped by a fieldsman otherwise than with any part of his person.

9. When there shall be more than four players on a side there shall be no bounds. All hits, byes, leg byes, and overthrows shall then be allowed.

10. There shall be no restriction as to the ball being bowled in overs, but no more than one minute shall be allowed between each ball.

INSTRUCTIONS TO UMPIRES.

THESE instructions, drawn up in 1892 by the Committee of the M.C.C., are intended as an appendix to the Laws of the Game.

FITNESS OF GROUND.

LAW 43.—At the commencement of a match, the umpires may be appealed to by either side as to the fitness of the ground for play.

Should they not agree, play will not commence until they are agreed.

In case of interruption from rain, as soon as the rain has ceased, the umpires shall, immediately, without further instruction, inspect the wicket, unaccompanied by any of the players, and decide upon its fitness. Should it prove unfit, they shall continue to inspect at intervals, until they decide that it is fit for play, when they shall call upon the players to resume the game.

The ground is unfit for play—when water stands on the surface, or when it is so wet, muddy, or slippery as to deprive the bowlers of a reasonable foothold, or the fieldsmen of the power of free movement.

The umpires are not to be biassed by the opinions of either side, still less are they to allow themselves to be influenced by the impatience of the spectators for a resumption of the game, and are not to be induced, by the public interest in a particular match, to declare the ground fit for play, unless they would consider that ground fit under any circumstances.

FITNESS OF LIGHT FOR PLAY.

The umpires may decide, on appeal, that there is not sufficient light for play. Should the light improve before the time for drawing stumps, they shall, without waiting for instructions, call upon the players to resume the game.

LAW 47.—An umpire is only justified in appealing to the other umpire when he is unable to decide, owing to his having been prevented from seeing the occurrence on which the appeal is based. He is not to appeal to the other umpire in cases on which he could give a decision, merely because he is unwilling to give that decision. If he be in any doubt, the principle laid down in Law 43, "That the existing state of things shall continue," shall be followed, and, in consequence, the decision should be in favour of the batsman.

LAW 48.—The special attention of umpires is called to

this law, which directs them to call "No ball," unless absolutely satisfied of the fairness of the delivery.

Umpires should not allow themselves to be unduly influenced by appeals from such of the field who were not in a position to form a judgment on the point appealed upon, or by tricks—such as throwing up the ball, on appealing for a catch at the wicket, without waiting for the decision. Umpires, being the sole judges of fair or unfair play, should remember that such devices are obviously unfair, and are not in accordance with the spirit in which cricket should be played.

By order of the Committee of the M.C.C.

June 20th, 1892.

Rules of County Cricket.

The following were established as the laws of county qualification, at a meeting held in the Surrey County Pavilion, Kennington Oval, on June 9th, 1873.

1. That no cricketer, whether amateur or professional, shall play for more than one county during the same season.

2. Every cricketer born in one county and residing in another shall be free to choose at the commencement of each season for which of those counties he will play, and shall, during that season, play for that county only.

3. A cricketer shall be qualified to play for any county in which he is residing and has resided for the previous two years; or a cricketer may elect to play for the county in which his family home is, so long as it remains open to him as an occasional residence.

4. That, should any question arise as to the residential qualification, the same should be left to the decision of the committee of the Marylebone Club.

5. That a copy of these rules be sent to the Marylebone Club, with a request that they be adopted by the club.

The county qualification was discussed at a meeting of the County Cricket Council, held in the Pavilion at Lord's, on December 10th, 1888. It was carried unanimously that:—

> "For purposes of county cricket, county boundaries are not affected by the Local Government Act, 1888.
>
> "During the two years a cricketer may be qualifying to play for another county under the residential qualification, he shall be allowed to play for the county for which he has previously been playing under that rule."

In consequence of the passing of this latter resolution the rules of county cricket have been modified by the addition of the words: "That a man can play for his old county during the two years that he is qualifying for another."

County Classification.

On the 20th of October, 1894, the Committee of the M.C.C., to whom the whole question of the classification of counties had been referred, made public the following scheme:—

Lord's Ground, N.W.
October, 1894.

The Committee of M.C.C. having at the request of the leading counties, prepared a scheme for regulating the county championship, and that scheme having met with the approval of counties concerned, the contest for the championship will in future be regulated by it.

The scheme as finally approved is as follows:—

Classification of Counties.

Cricketing counties shall be considered as belonging to first-class or not. There is no necessity for further subdivision.

First-class counties are those whose matches, with one another, with M.C.C. and Ground, with the Universities, with the Australians, and such other elevens as shall be adjudged "first-class matches" by the M.C.C. Committee, are used in compilation of first-class batting and bowling averages.

There shall be no limit to the number of first-class counties. The M.C.C. Committee may bring new counties into the list, may remove existing ones from it, or may do both.

The list for 1895, which still (1897) holds good, was as follows:—

Derbyshire	Kent	Nottingham	Sussex
Essex	Lancashire	Somerset	Warwicks.
Gloucestershire	Leicestershire	Surrey	Yorkshire
Hampshire	Middlesex		

The County Championship.

After the close of each cricket season the Committee of the M.C.C. shall decide the county championship.

It shall be competed for by first-class counties. No county shall be eligible unless it shall have played at least eight out and home matches with other counties, provided that if no play can take place owing to weather or other unavoidable cause such match shall be reckoned as unfinished.[1]

One point shall be reckoned for each win; one deducted for each loss; unfinished games shall not be reckoned.

The county which during the season shall have, in finished matches, obtained the greatest proportionate number of points shall be reckoned champion county.

This code, though frequently revised, is not perfect, but the interpretation of any law and the settlement of any question for which the laws do not provide, are left to the umpires, whose ruling is (or ought to be) cheerfully accepted by both sides. A few notes, explanatory of points in the laws, follow.

Law 3. [*See* Umpires, p. 239.] In ordinary games, each side provides an umpire and scorer, but only men of strict integrity and impartiality should be allowed to stand.

Law 4. The foundation of the ball is a cube of solid cork, wrapped round with layers of cork-shavings and very fine twine; over all is a tightly-sewn skin of reddish leather. A good ball will stand a great deal of knocking about, but bad ones soon lose their shape, in which case it is customary to allow a new one to be used, even in the middle of an innings.

Law 5. In the bat there is no relation required between the length of blade and handle; the blade is generally about 22 in. long, and the handle about 14 in., the full legal size being found inconvenient even for tall men. The blade is made of carefully-seasoned and selected willow, and the handle of numerous slips of cane glued together, with various patent additions to combine elasticity with strength.

Laws 6, 7 and 8. The following diagram will best explain how to "mark out the crease."

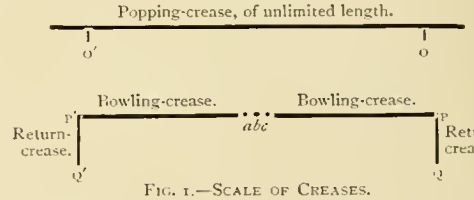

Fig. 1.—Scale of Creases.

The distance between O and P, O' and P' is 4 ft. PQ and $P'Q'$ are the "return creases,".

[1] In 1896 the number of out and home matches qualifying for the Championship was reduced to six, owing to the Australians' tour, and for 1897 the number has been fixed at seven.

and are of unlimited length; they are at right angles to *Pc* and *Pa*. The stumps are represented by *a*, *b*, and *c*; from *a* to *c* is 8 in., outside measurement of the wicket. *Pa* and *Pc* are 3 ft. long. The "popping crease" is so called because the bat is "popped" over it when the batsmen are completing a run; it should be made about 10 ft. long; the return crease should be at least 1 ft. long, as some bowlers are apt to get the hinder foot very wide.

Law 11. The umpire should call "No ball" *directly* the ball, wrongly delivered, has left the bowler's hand. [*See* Law 48B.]

Law 12. The umpire must *call* the "wide"; some men only signal to the scorers with the hand [*see* p. 239], thereby confusing the batsmen. [*See* Law 48B.]

Law 13. [*See* "One Day Matches," Law 3.] The ball is not "finally settled," if the batsman, having overreached himself in playing forward, has not entirely recovered his balance, the ball being in the wicket-keeper's hands. The wicket-keeper should not pretend to throw the ball to the bowler in the hope of tricking the batsman out.

Law 16. The case has occurred before now of an umpire calling—wrongly—"Wide," before the ball has passed the batsman; of the batsman hitting the ball, and being caught. Is he "out"? The equitable decision is that he *is* out: the ball was proved, by the fact that the batsman hit it, *not* to be "wide," whatever the umpire thought, erroneously, that it was going to be. In other words, the umpire's *opinion* was confuted by the batsman's *action*, and if the latter had hit the ball for six he would be very dissatisfied if the runs were disallowed.

Law 18. Note that a bowler may bowl a few preliminary balls at the side of the wicket, to get his arm loose.

Law 21. By "bowled down" is meant "if a bail be dislodged, and fall to the ground."

Law 23. "With ball in hand" means "with the ball in the hand of the arm that knocks off the bail." If the wicket-keeper—or bowler, in the case of a "run out"—takes the ball in his right hand, and knocks down the wicket with his left hand or arm, or *vice versa*, the batsman is "not out."

Law 27. "Wilfully strike" is interpreted to mean "strike with the intention of running," and hence if a batsman, having struck the ball a second time, with whatever motive, starts to run, it is assumed that he struck the ball "wilfully" a second time, and he is given out.

Law 30. The point of the rule is the word "wilfully"; the umpire alone can decide from the batsman's behaviour whether the obstruction was wilful, or accidental, or a legal effort to save his wicket, as provided by Law 27.

Law 34. "Cannot be recovered," *e.g.*, if it lodge in a tree or building; if it is hit into a pond or river; or if it be carried off by a dog; all of which things have occurred.

Law 40. To this law should be added: "or if the ball, hit by the striker, hit the substitute and then be caught."

Law 43. This law is not perfect, as it gives the umpires no authority as to how to act in the case of "unfair play," for a man cannot be given out and registered in the score-book as "played unfairly," though if a fieldsman by interfering with the batsman causes the loss of his wicket, the umpire can, on appeal, give the batsman not out.

As to the question of the fitness of the ground for play, *see* UMPIRES, p. 239.

Law 44. "Fair" means "such as to favour no particular bowler."

Law 45. This law was enacted to prevent sharp practice. The chivalrous behaviour of cricketers has seldom, if ever, made it necessary for the umpires to put it in force.

Single Wicket—This form of the game, at one time very popular and often played for large stakes, has now practically disappeared. It need only be remarked that if five men, or more, play against less than five antagonists, the numerically weaker side has all the privileges conferred by Law 9, while the other party is bound by the special restrictions of Laws 2, 3, 5, 6, and 7.

Instructions to Umpires—Some remarks on these instructions and on the duties of umpires in general, will be found on p. 239, under the head of **Umpires.**

Rules of County Cricket—These rules, together with the "Classification of Counties," and the regulations for "The County Championship," are subject to alteration from time to time, as necessity arises, especially with regard to the calculation of points. The system as printed has been in use during the year 1896, but it is possible that by the time these lines are read some new method of scoring points may be adopted, the system now in vogue not being entirely satisfactory.

How a Match is Played—Having discussed and commented on the rules, the next point is their practical application to the game, as played by experienced cricketers, and the most convenient method will be to describe, as briefly as possible, the ordinary procedure. When both sides have mustered on the ground, each will be under the charge of a captain, who will manage the side, arrange the order in which his batsmen are to go in, and the place each man is to occupy in the field. The captains must also arrange at what time lunch is to be taken, and at what time "stumps are drawn," *i.e.*, at what time play stops for the day. If the match-inclosure is restricted by the presence of a ring of spectators or is limited in size, hits to the ring or to the boundary might not get their full value, and hence a nominal value is assigned

to them by arrangement between the umpires [*see* Law 44], this value being accredited to the batsman if he hits the ball to the boundary, or to the score if the ball travels there in the way of "byes" or "leg byes," under Law 17. It is the business of the umpire at the bowler's end to decide whether the ball has actually reached the boundary. The usual allowance for such strokes is four runs, but if the ball is hit clean out of the ground, six runs are generally awarded. Three runs should never be recognised for a boundary hit, for the following reason: it may happen that towards the close of a game, when time is precious, a good batsman may be partnered by a bad one; the bowler will naturally be anxious to bowl to the inferior player, and if he finds the superior player opposed to him, he can deliberately sacrifice three runs by sending a ball to the boundary, and as after a hit or bye for an *odd* number of runs the batsmen "change ends"—this will be explained hereafter,—the inferior player will have to receive the next ball bowled. This is also the reason why the batsmen do not change ends after a "wide" or "no ball" has been delivered.

The boundaries and the times for stopping having been arranged, the captains then—but *not* before—toss for the choice of innings, the successful captain having the privilege of taking the first innings for his side, or of ordering the others to bat first. As a rule it is wise to go in first [*see* p. 238]. The other side—the "fielding" side—then goes out to the ground; its captain appoints two men to bowl alternately from either end, and directs the others to take their proper places in the field, the umpires having preceded them to the ground. When all is ready, the two selected batsmen go to the wickets, having settled between themselves which is to receive the first ball.

And here a digression is necessary to explain the positions of the fieldsmen: their individual duties are explained later on, but it may be premised for the information of those who are not acquainted with the game, but who wish to become initiated into its mysteries, that the bowler is armed with the ball, and that his business is to try to get the batsman out in one of the various ways for which provision is made by the rules (Laws 21—30); that the fieldsmen endeavour to give him their best support, and that the batsmen, each in his turn, try with the aid of the bat to baffle their assaults. The duties of the umpires and scorers are explained on pp. 239 and 240.

It is impossible to lay down any final statement as to the positions taken up by the different fieldsmen, many circumstances combining to influence the judgment of the captain and bowler—who should always work in concert on this point—as to the best arrangement of their forces; the most important of these circumstances are the pace of the bowling; the condition of the ground, whether fast or slow: the ability of the fieldsmen, and the character, known or to be discovered, of the striker, who may be a consistent hard-hitter, an occasional hard-hitter—perhaps in a particular direction only—or a quiet and steady batsman. Nothing except experience can guide the authorities on this point, but it is the duty of captain and bowler to watch the style of every new batsman as he comes in, to see whether any special alterations should be made in the field (*i.e.*, in the fielding side) with a view to getting him out. With this preface a couple of diagrams are here submitted, giving the usual positions of the fieldsmen, first for a fast bowler, and secondly for a slow bowler, it being assumed in each case that the batsman plays a free and sound game, hitting bad balls severely and playing the good ones with a fair amount of freedom. It may also be premised that to hit a ball from eighty to ninety yards before it reaches the ground is a good free stroke, but not at all beyond the power of an average hitter. In Fig. 2,

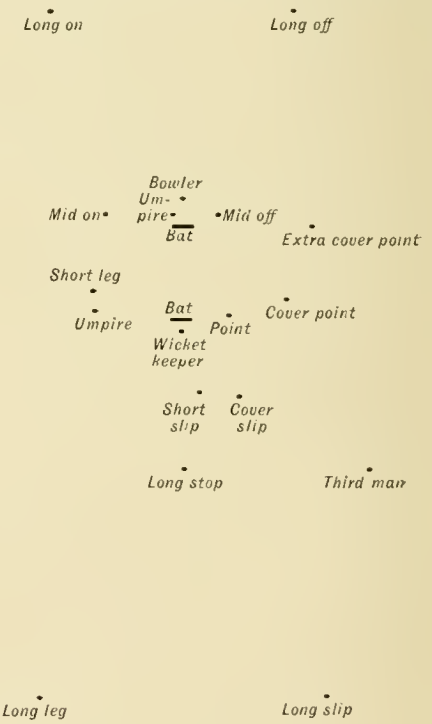

FIG. 2.—THE FIELD AS SET FOR FAST BOWLING.

then, the ground is supposed to be fast and in good order; the bowling is fast too, but not abnormally so; the batsman is supposed to be a free, clean hitter, but not of a phenomenal type; the fieldsmen are all supposed to be first-class. The side of the ground on the left of the bowler is known as the "*off*-side"; that on his right as the "*on*-side," or "leg-side." One umpire will be observed standing near the wicket

at the bowler's end, the other in a line with the "popping crease," and about eighteen yards from it at the other end. The batsman A is about to receive the ball, while his partner B stands behind the popping crease at the other end. The distances of the fieldsmen from the wicket may be roughly reckoned as follows: "Long-off" stands at eighty yards; "mid-off," "cover-point," and "third man" at thirty yards; "point," "short-slip," and "cover-slip" at ten yards; the "wicket-keeper" is close to the wickets; "mid-on" is in a line with the bowler's wicket, and about ten yards from it. It will be seen that only ten men have places assigned to them, the reason being that the position of the eleventh man depends entirely on the stroke most favoured by the batsman A; any of the positions marked long-on, extra cover long-slip, short-leg, or long-stop, might well be occupied. Further, if the bowling is very fast or erratic, or the "wicket-keeper" is not very good, the latter may with advantage stand back about ten yards. [*See* THE WICKET-KEEPER, p. 236.] For slow and medium-paced bowling, a man at long on and extra cover is almost necessary, and cover-slip may be moved to one of these places with advantage, but beyond this it is hard to lay down laws as to the best allocation of the fieldsmen, for the character of the batting is the only thing that can guide the captain.

After this long, but most necessary digression, we pick up the thread of our story from the point at which the fieldsmen and umpires were imagined to be ready in their places, and the batsmen, having settled which was to receive the first ball, had proceeded to their respective wickets. Batsman A, on going to his wicket, begins by asking the umpire at the other end to give him "Guard," or "Block"; in other words, he holds up his bat in front of his wicket, the face towards the umpire, to ascertain whether his bat, as he holds it, is protecting his wicket from the bowler's attack. As the bowler may be either right-handed or left-handed, and may elect to bowl from either side of the wicket, this "guard" is somewhat important, for the batsman may be "out" (under Law 24) if he obstruct with his leg the passage of the ball to the wicket, and the position of his bat, relative to the position of the bowler, will help him to stand so as to keep his legs clear. The three stumps are known as the "leg," "middle," and "off" stumps; the one nearest to the batsman being the "leg-stump." The umpire, placing himself as nearly as possible where the bowler's arm will probably come, or in such a place as the fancy of the batsman may suggest, looks at the bat, held upright about a foot behind the popping crease, and informs the batsman what stump or stumps are hidden from view by the bat; the batsman, when he has found the desired place, either makes a scratch with a bail or his spikes, or hammers a small hole in the ground with the point of the bat, and the ceremony is complete. The batsman now knows what position he occupies relative to the bowler's arm; the umpire looks to see if every one is ready, calls "Play!" and the game begins in earnest. If the batsman hits the ball past one of the fieldsmen, and he and his partner run across from wicket to wicket, each getting inside the popping crease without being "run out" (Law 28), one run is scored; if the

FIG. 3.—THE FIELD AS SET FOR SLOW BOWLING.
Scale, ½ in. to 22 yds.

process can be repeated, two runs, and so on. It may be observed that if an *odd* number of runs is made for a hit, batsman B will have to receive the next ball. When five balls have been delivered the umpire calls "Over!" A fresh bowler is deputed to bowl—this time from the other end—and the fieldsmen take up fresh places, but bearing the same relation to the position of the striker as before; but as we will suppose that the second bowler is a *slow* bowler, the position of the fieldsmen must be to some extent altered, somewhat as shown in Fig. 3. Here it will be seen that both third man and short slip have come several yards closer to the wicket; that point, cover-point, mid-on, and mid-off are at about the old distance from it; and that long-on is now permanent, both he and long-off being at ninety yards distance, more or less, according to the hitting powers of the batsman, on which also depends the position of the eleventh man, who may be placed

at extra cover, long-leg, or over the bowler's head; if the last, long-on and long-off would probably move a few yards to their right and left. To save needless walking and waste of time some of the fieldsmen would occupy a fresh place when "Over" was called, but the wicket-keeper, point, mid-off, mid-on, and cover-point would cross over. Third man might fall back to long-on, and cover-slip to long-off. The original long-off would come up to third man, and the bowlers would probably field short-slip when not engaged in bowling; but it must be repeated that all these alterations depend on the capacity of the fieldsmen to fill each particular place, and of this the captain must be sole judge. If a left-handed batsman comes in, the field must be re-organised for his benefit, the relative positions of the men being the same; to save time, each man should be given a place as near as possible to that which he occupied for a right-hand batsman.

The history of a whole game is the history of two overs, so far as the routine of the game is concerned. The batsmen maintain their position as long as they can; the fieldsmen move across each time that "Over" is called, and the original bowlers, if unable to defeat the batsmen, are replaced by others according as the captain thinks such a change advisable. The runs mount up, and the "wickets fall"—the cricket phrase for "batsmen are got out"—till there are no more left to come in, or the captain of the batting side "closes his innings" (Law 54). It should be observed that when ten batsmen have been got out, the whole side is considered out, as although there is one batsman left who has not been defeated, still he must retire, as he has no comrade to remain with him. He is entered in the scoring-sheet as "not out." The innings being ended, the original batting side goes out to field, and their opponents proceed to bat, this going on alternately till the day or days assigned to the match come to an end, or the match is decided. No side, however, goes to the wickets more than twice in the same match.

Having dealt with the generalities of the game, the time has arrived to discuss its several points in detail—the batting, bowling, and fielding, and the best and recognised methods for acquiring proficiency in them; but first it must be premised that a first-class cricketer, or he who would be a first-class cricketer, must not devote his attention to one of these three sciences to the exclusion of the other two. The bowler, if any one, is allowed to specialise, but even the best bowler's value is largely discounted if he is unable to catch and field.

In first-class cricket, as played nowadays, "all-round mediocrity," is not valued very highly, but a man who is a first-class bowler and fieldsman, or a first-class batsman and fieldsman, will always find a place in a first-class side, and, to become either of these, careful, patient, and whole-hearted practice is the only royal road. There are no "short cuts" to good cricket, though on a few fortunate individuals the science of the game seems to have descended like a revelation; their probation has been comparatively short, and their ultimate success unbounded; these, however, are the lucky millionaires of the game: the ordinary mortal can only win his way forward by determination, patience, and practice. With this short preface, to which, short as it is, too much attention cannot be paid, the discussion of the best methods of attaining comparative perfection—absolute perfection is impossible—may now logically follow, and the first paragraph shall, as is usual in works on cricket, be devoted to the batsman, for batting possesses a fascination of its own, which appeals with especial vehemence to ninety-nine out of every hundred cricketers.

The Batsman—Little space is needed for a wicket on which good practice can be had; a level strip, 10 yards by 4, is ample; but it should be carefully rolled, mown, and cleared of weeds, and the wickets should be frequently shifted to avoid unnecessary wear and tear of the ground. The proper nets, which can be procured at any cricket warehouse, save an infinity of trouble and time, and with these, and a couple of boys to field, one bowler is quite sufficient, especially if two or three balls are provided. Allusion has already been made to the batsman's outfit, but one word of advice must be added: "Never, under any conditions, go in to bat without pads and gloves: the slowest and easiest ball may hit one on the knuckle and carry away a piece of skin, or may glance off the bat on to shin or ankle." A word may be useful as to the selection of a bat, but every batsman must find out what kind of bat suits him best, and choose accordingly. The weight varies from 2 lb. to 2 lb. 10 oz., but only a man of special strength can use the latter weight, and the former is exceedingly light, so that the average weight varies from about 2 lb. 3 oz. to 2 lb. 6 oz., and it is worth while remembering that, as a bat should be rubbed fairly frequently with unboiled linseed-oil to keep it from getting dry, it always increases in weight. Weight, however, is hardly so important as balance, a well-balanced bat, though heavy, being far more easy to wield than a light, but ill-balanced weapon. All the makers of the present day turn out excellent bats, of well-seasoned willow, so that a good bat is easily procured, of a clean straight grain, free from knots and blemishes. Every man must find out the kind of handle that suits him best; indeed, the patent handles are innumerable, but the larger the handle the greater is the leverage, and, consequently, the greater the ease in handling the bat. If on grasping the

handle with the right hand, the end of the middle finger reaches the ball of the thumb, and does not overlap it, the handle will be of the right size; but on this point, as in the matter of weight, every man has his idiosyncrasy. The bottom of the bat should not be too thin, as when a ball is struck with the end of such a bat, the fingers are apt to be unpleasantly jarred; nor should the handle be too stiff. As a firm grip of the handle is essential, an india-rubber casing is useful if the palm of the hand perspires. One further word of advice is necessary—*choose a bat which is too light, rather than one which is too heavy*. Everything depends upon quickness, and while it is easy to move a light bat slowly, it is impossible to move a heavy bat (*i.e.*, a bat too heavy for one's strength) quickly. It is no bad practice to go through the motions of the various strokes in one's own room, a sort of drill routine, in which hand, leg, and eye take part.

Practice should always be carried out as far as possible under match conditions; the popping crease should be marked, and the batsman should be careful to take "guard" at the distance from the wicket which he finds most suitable to his style. As a rule the mark should be made about 3 ft., a bat's length, from the wicket; some men like to take it nearer to the crease, but the distance mentioned is long enough to obviate any danger of hitting the wicket, while the nearer one gets to the crease the greater is the danger of shifting the foot over it, and so running a risk of being stumped. But what one's custom is in a match, that must it be in practice.

Position—A correct position is very important, even though some men who are really fine batsmen adopt a very unorthodox pose. It must be firm, yet easy. The following instructions may help the beginner. Take "middle-and-leg" guard [*see* GLOSSARY] about twelve inches behind the popping crease. Set the bat lightly on the mark where the "block" is, the face towards the bowler. Place the toe of the right foot so as just not to touch the inner edge of the bat, and parallel to the crease: the foot will then be just clear of the wicket. Set the left leg about fifteen inches in front of the right, the toe pointing slightly towards the bowler, the two heels being in a line at right angles to the crease. The weight of the body should rest entirely on the right leg, not on the bat or the left foot; indeed, only the left toe need touch the ground, and that lightly. The right knee should be straight—this is most important—and the right leg as rigid as a bar of iron. The left shoulder should be brought well across the body in the direction of the bowler. The correctness of the attitude may be tested by lifting the bat and the left leg off the ground together; if the batsman can stand still without swaying, his balance is correct. The body must naturally bend over the bat, *but from the waist and not the knees*, and none of its weight must rest upon the bat. On the immobility of the right foot and the freedom with which the left moves, the batsman's success largely depends.

Even so simple a thing as holding the bat can be done in a wrong way. Grip the handle of the bat with the right hand about the middle; the grasp must be as tight as possible, and must never be relaxed. All four fingers must clutch the bat, the thumb resting just below them, the knuckles of the clenched fist being towards the bowler. The grip of the left hand must not be too tight; the knuckles are towards the batsman and the back of the hand towards the bowler, while the end of the handle rests in the palm, against the ball of the thumb, the handle being practically a prolongation of the left arm. Both the grip of the bat and the pose of the batsman should be carefully noted and practised in private, the bat being swung about in the direction of an imaginary ball. The various strokes mentioned hereafter may also be tried when the wrist and arm are familiar with the feeling of the bat, and it will soon be found that the right hand is the executive hand, and gives force to the stroke, while the left guides the bat, and may be called the "directive" hand, the importance of which will be seen in the next paragraph.

"How beautifully straight his bat is!" is a remark often made about a good batsman. As a matter of fact "upright" would be a more correct term than "straight," but "straight" is the almost invariable epithet, and this "straight bat" is the first thing to be mastered by the novice, as it is the primary essential for sound cricket, offensive and defensive. Only batsmen of special natural advantages can afford to play with a horizontal bat, and even they often lose their wickets in consequence. The bat, then, except for certain strokes which will be described, must be kept absolutely perpendicular, and it will be found by practice that the *left* hand is called upon to do this part of the work and to correct the vigour of the right hand. More will be said on this subject when "back-play" and "forward-play" are being dealt with, but for the present, attention may be called to Fig. 4, in which the batsman is standing in position ready to receive the ball. No criticism of his pose is necessary, except that his weight *appears* to be equally distributed on either leg, whereas the left should bear none of it. The "skeleton pads" he is wearing give, by the way, the best protection, and are cooler and lighter. If a left-handed bowler is bowling round the wicket, the left foot may be brought further across the wicket, and the left shoulder may follow it. The shoulder should always be over the foot.

Tabulating these remarks for convenience of reference we may lay down the following rules:—

I. Grip firmly with the right hand, less firmly with the left.

II. The right toe should be just clear of the wicket.

III. All the weight of the body should be on the right foot, none on the left foot or bat.

IV. Both knees should be kept straight.

V. The left shoulder should be brought well across the wicket.

VI. The bat must be kept perfectly upright for nearly all balls, always for those which are straight or nearly straight.

No spare moments will be wasted that are spent in lunging about with the bat, hitting at imaginary balls, straight and crooked; by this means the wrists will become supple and will learn to work together, a most important point. Two things, however, will be noticed—or should be noticed—first, that it is not easy to keep the bat upright even when the imaginary ball is straight; second, that the point of the bat naturally flies up, so that the ball, if struck, would be hit into the air, and the batsman run a risk of being caught out. With regard to the first point, the question of balancing the body on the right leg is all-important, as the left leg is then free to move in any direction, and it will be found that by advancing it in the direction of the supposed ball, the body going with it, the bat can be kept perfectly straight, and will meet the ball flush with its face. Further, by transferring the whole weight of the body from the right to the left leg at the moment when the ball and bat meet, the bat will receive a considerable share of that weight and impart it to the ball, the result being a much more vigorous stroke. But it must be especially remembered that under no circumstances (except as detailed

Fig. 4.

on pp. 222 and 223) must the right toe be allowed to leave the ground; as, if the toe is in the air, however little above the turf, the batsman is out of his ground, provided no other part of his body, or his bat, is properly grounded. By shifting the left foot, as described, it will be found that not only can the bat be kept "straight" for balls a foot or more outside the off-stump, but also that additional power can be put into the stroke.

To deal with the second point. It is difficult at first to reach far forward without raising the point of the bat and hitting the ball into the air. Some men, when playing forward, avoid this by turning the left wrist outwards as they lunge forwards, and bringing the back of that hand against the wrist of the right hand. The move is very simple and soon becomes mechanical, but more will be said of this under "Forward-Play" (p. 221). The second and greatest aid towards "keeping the ball down," *i.e.*, preventing it from going in the air, is to thrust the left shoulder towards the direction of the ball as the left foot goes out, almost pointing the shoulder at the ball itself. This is not very easily described, but any good cricketer can make the matter clear, practically, in a moment, and even the novice may teach himself by following the instructions given.

Thus far it has been assumed that practice has taken the form of a sort of drill; now we may pass on to the moment of encounter, describing and explaining the various recognised strokes and the methods of making them. It may be premised that the bat should in all cases strike the the ball and not be struck by it, and that the ball should be met, if possible, with the lower part of the blade, as thereby the "driving," *i.e.*, the propelling, power of the bat is utilised to the best advantage. As it will be necessary to use several technical terms connected with bowling, it will be convenient to explain them here, reminding the reader that the "off-side" is on the left of the bowler, and the "on-side," or "leg-side," on his right. When the ball "breaks" (*i.e.*, twists) from the off-side towards the wicket, it is said to "break back," when from the leg-side, to "break from leg." A "full pitch" is a ball which the bat meets before it touches the ground. A "yorker" (or "tice") pitches on, or within six inches of, the popping crease; a "half volley" from one to two yards in front of it: a "length-ball" from one to two yards further back still; and a "long-hop" pitches yet nearer the bowler. In the case of an exceptionally tall batsman with a long reach, a ball is a half-volley even if it drops somewhat shorter than the distance given, and this is one of the advantages which height bestows. Each different class of ball, it will be observed, has a fairly large range, depending on the reach of the batsman. More accurate definition is impossible, especially as a ball may be a half-volley on a fast wicket, which is a good length-ball on a slow one. Experience will be the batsman's best instructor on these points, and he should also study the article on "Bowling."

Most strokes are in the main either defensive or offensive, though many combine both qualities. It is clearly the batsman's first object to prevent the bowler from getting him out,

Fig. 5.

but there is no better way of doing this than by hitting the ball to the furthest possible distance. But as there are certain balls, which from their "length" (*i.e.*, the distance at which they pitch from the batsman) it is difficult, or impossible, to hit away, and as defence is paramount, they shall be dealt with from this point of view first. There are two classes of strokes, known as "forward-play" and "back-play," the original object of which is to stop the ball from hitting the wicket. Many fine cricketers hold that back-play is the foundation of good defence: others are equally vehement in their support of forward-play. The temperament and physique of the individual alone can decide which he will, as a rule, adopt; but the taller the man is, the better is he adapted for forward-play, as his reach gives him an immense advantage over a shorter player.

Back-Play—Fig. 5 gives an excellent illustration of the position for back-play. The ball has pitched rather short of a "good length" but is perfectly straight; the batsman has met it correctly, by drawing back his right foot, which his left foot follows, and by keeping a perfectly upright bat for the ball to encounter. The errors of the position are (1) that the bat does not appear to be *quite* straight, and (2) that if the left foot were more in front of the right, the batsman would run less risk of being "cut over" (*i.e.*, hit in the groin) if the ball broke back suddenly. It may be observed that this is one of the cases in which the right foot is moved, but it must be specially noted that it is still kept behind the popping crease. The illustration shows what may be called *quiescent* back-play, the pitch and rise of the ball not allowing the batsman to try to score off it, but a taller and more commanding man would have waited till he felt the ball touch the bat, and would then, by an instantaneous—almost electrical—movement of his wrists, have forced the ball away in front of him to some distance, instead of merely allowing it to drop against the bat, as in the plate. The position of the left elbow, cocked up in the air so as to keep the bat upright, should be noted: some batsmen exaggerate this position in their determination to play straight, and raise the elbow till it almost conceals the face: this, if a fault, is a fault on the right side.

Forward-Play—This style of play is adopted when the ball is pitched fairly close to the batsman, but is not so far up as a half-volley, which is the best ball to hit. Fig. 6 shows the position of the batsman at the supreme moment, when he has lunged out as far as he can reach, hoping to "smother" a somewhat over-pitched ball before it has time to rise or break. Observe that the left wrist has turned round, as explained on p. 220, that the left shoulder is pointed right at the ball, that the bat is perfectly upright, and that the point of it is kept back by the influence of the left hand, the left foot being advanced towards the ball, while the right toe is just on the ground. The weight of the batsman has been entirely trans-

Fig. 6.

ferred from the right leg to the bat and left leg, and if at the moment of transference the bat hit the ball, the latter will have been sent away at a considerable velocity. This description

may sound very elaborate, but a few trials will prove that the position is easily attained, provided that the original balance is perfect and that the wrists work freely and easily together. The beauty of the whole stroke consists in the "timing" of the ball; and if the question is asked, "What is timing?" the only answer is that, "When the batsman times the ball correctly, the whole power of arms, wrists, and body is thrown into the bat at the precise instant when it meets the ball; at this instant the ball will probably be just passing the left leg." A blow is perfectly timed at boxing when the fist encounters the opponent's face at the exact moment when the arm has straightened out; and the same remark applies to cricket.

At this point the reader will naturally ask, "When am I to play forward, and when am I to play back?" As a definite answer is impossible, one must fall back on generalities, and say that, as a rule, on a fast wicket, a batsman of average height should play forward to all balls which pitch within two and three or, sometimes, four yards of the popping crease; for a shorter man to do so with effect, the ball must be closer to him, and *vice versa* for a tall man: but much depends on the temperament of the batsman, the pace of the bowling, and the condition of the ground. Some tall men persistently play back, and lose the advantage of their height; some small men habitually play forward, and by overreaching themselves cause the ball to drop lifeless from the bat. On a fast, smooth, true wicket the ball will not rise much higher than the top of the stumps, and a comparatively short ball may then be played forward; but if the ground be slow or rough, the batsman, being in a somewhat more strained position than he is when playing back, will be unable to adapt his stroke readily to the vagaries of the ball, and back-play will be his best resource.

Forward-play is the best way of meeting a fast bowler, as the ball has less twist on it than a slower bowler can produce. To play forward to slows is dangerous unless the ball can be "smothered" to a certainty.

A useful general rule is, "When in doubt, play forward on a fast wicket, and play back on a slow one." On a ground as fast as Lord's it is always a rule of thumb to play forward rather than back. On a fast, true wicket, on which the ball does not rise higher than the stumps, runs may be got fairly freely, even off straight balls, by both styles of play, the forward stroke, if well-timed, driving the ball hard in front of the wicket; while by back-play a skilful batsman can place the ball between the fieldsmen in front of the wicket, or by a well-timed turn of the wrist at the moment the ball strikes the bat direct it along the ground through the slips; but it is impossible to make back-play as powerful as forward-play, as it depends on the arms and wrists alone, the weight of the body lending little help.

The Drive—This, the most delightful of strokes, is the first genuine "hit" hitherto introduced, as the length-ball and long-hop, when straight, must be met by a stroke the primary object of which is defence. When, however, a ball is pitched nearer to the batsman than a length-ball, it becomes a "half-volley," and the batsman has a fine chance of making a big hit. To be bowled out by a half-volley is humiliating, to play forward and smother it is to lose a chance, to play back to it is probably fatal. The ball should be hit in front of the wicket with a good swing of the bat, the left foot being moved, as usual, in the direction of the ball, and when the stroke is correctly made, every muscle of the legs, back, arms and wrists seem to take part in it, and the ball flies off without an apparent effort. To time the stroke properly, the bat should meet the ball just as the latter is rising from the pitch. It adds force to the hit—besides enabling the striker to get to exactly the right spot—to jump in to meet the ball, even leaving one's ground and taking the risk of being stumped, if the ball is missed altogether. This is exactly what the batsman is doing in Fig. 7, which, however, does not show the position of the feet at the moment of impact. When the down-swing of the bat has brought it against the ball, the right foot will close up on to the left, and the whole momentum of the

Fig. 7.

body will be added to the swing of the arms and bat. One rule must never be forgotten: "Never jump out to drive a ball on the off-side." It is hard to keep the bat straight

when the ball is, say, a foot wide of the off-stump; the chances of missing it are consequently greater, and the wicket-keeper has the easiest of opportunities.

To hit a half-volley all along the ground, the

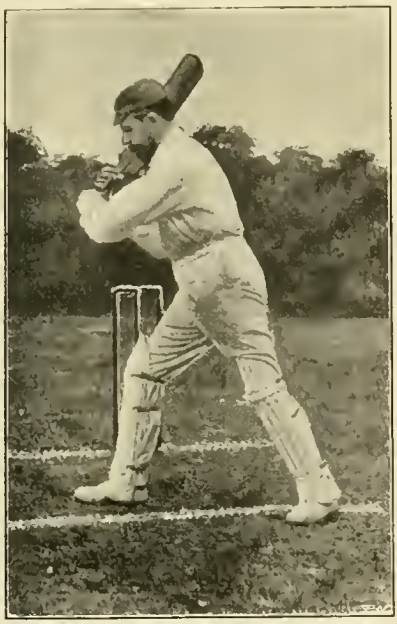

Fig. 8.

left hand must check the point of the bat so that it does not go beyond the left foot, but many batsmen in the exhilaration of the stroke let the bat complete its swing, and the ball soars away in the air in the direction of one of the "long-fields," who may, or may not, be able to catch it: the batsman has to take his chance of this, relying on the fact that it may be too far to the side of the fieldsman to be caught, or may fly fairly over his head; since, however, it is frequently hit to a distance of 100 yards before it drops, and has been sent by fine hitters as far as 170 yards, a little risk may fairly be taken. It is useful in practice to try to hit a straight half-volley straight back, either over the bowler's head or all along the ground to him. A crooked ball should be sent away on the same side as that on which it pitches. Probably more runs have been got off a half-volley than any given ball, and probably more batsmen have fallen a victim to its temptations, as not only may a fair hit be as fairly caught, but also any error of timing or any inaccuracy may send it high into the air.

The Cut—This is another beautiful stroke, which appeals to the experienced cricketer even more than the drive; the latter even the uninitiated can appreciate, as the sight of the ball sailing through space is easily "understanded of the people." The ball which the batsman cuts is more or less wide of the off-stump, and is generally short of a good length; indeed, many batsmen nowadays prefer to let the good-length ball go by, as the slightest error may send the ball into the hands of an expectant "slip." Figs. 8 and 9 show the batsman preparing to strike, and striking the ball. In making this stroke several of our canons are violated; firstly, the right leg is shifted so as to take the batsman across to the ball; secondly, the bat is used horizontally and not perpendicularly; thirdly, the weight of the body is a negligeable quantity, as most of the work is done by the wrists and forearm. It may help the reader who happens to be a fisherman, to tell him that what he does perpendicularly with a two-handed salmon-rod, he does horizontally with a cricket-bat. The ideal ball to cut is a long-hop, not too short, about twelve inches outside the off-stump. Directly the batsman realises the situation, out goes his right leg, which should touch the ground at about the same moment as the bat hits the ball, or even a moment before, the two wrists moving the bat with a sort of "flicking" movement, impossible to describe, so that the ball is struck just as it has passed the right foot. It is a stroke which must be seen to be imitated; but if all goes well, the ball will travel square with the wicket, just past "point's" left hand, or even further behind it, as a clever "cutter" can place the hit with much precision. If the ball rises much—is a foot higher than the wicket, for instance—it should be left severely alone, as a catch is very likely to ensue. The cut is one of the few strokes made *across* the

Fig 9.

path of the ball; in most instances bat and ball travel along the same path, but in opposite directions. The cut is a difficult stroke to acquire; indeed, some batsmen never get pro-

ficient at it, and endeavour instead to hit the ball, still with a horizontal bat, in front of the wicket. Such a stroke is often incorrectly called a "cut," but it is rather a species of "drive." Great care should be taken to "keep the ball down" (*i.e.*, hit it along the ground), and in such a way as to make it skim the surface without bounding too high. If any one finds a difficulty in "hitting" this particular ball, let him try "guiding it": in other words, let him frame for the cut, and, as the ball passes the right leg, just lay the bat against it, without attempting to strike: the pace imparted to the ball by the bowler will hardly be checked, and many a run may be got by the stroke, while in process of time the man who has mastered this will master the cut, pure and simple, as well.

The Leg-Hit—A ball which is well pitched up and would, if left alone, hit the batsman's

FIG. 10.

leg, may easily be driven in front of the wicket to "long-on," or more squarely with the wicket; but when such a ball would pass just outside the legs a different kind of stroke is required, as the "drive" would be a physical impossibility. This class of hit is known as the "leg-hit," and it may be made even off balls which pitch straight for the wicket, or even on the off-side of it, but such strokes are not strictly orthodox, and demand special powers on the part of the batsman. They are dealt with under the heading of "The Pull."

In the present day most bowlers try to get the batsmen out by bowling tempting balls on the off-side for them to hit into the air, and the result of the increased accuracy of bowlers is that very few balls are sent up which pitch on or outside the legs; hence leg-hitting, pure and simple, is, for want of opportunity, almost a thing of the past, except in cricket of a somewhat inferior grade. Still, as it is given to few to reach good cricket without a long noviciate, and as the leg-stroke is as delightful to the striker as to the spectator, a more than passing allusion must be made to it. The "leg-hit" covers a large range, as shown by the position of "long-leg" in Figs. 2 and 3, and it is even more extensive than this, and the various modes of scoring off a leg-ball are too numerous for exact description. The cricketer will find them out for himself, but a few general hints may be helpful. A long-hop on the leg-side may be hit away square, with a horizontal bat, which is the most drastic method of treatment: or the batsman may simply hold the face of his bat at an angle of about 45° to the ball's direction and allow the ball to strike it, when the pace imparted by the bowler will send the ball away behind and to the left of the batsman. Such a stroke is known as "the glance" or "the glide" (Fig. 10). This stroke is made off a ball of any length; and to men who are not good *hitters* to leg it is invaluable, as the ball, if the bowling be fast and the stroke made with accuracy, flies away to the boundary like lightning. In this case it will be seen that the ball hits the bat, and that its course is deflected by it, but this is not "hitting," in any sense of the word. The proper "leg-hit" is made off a ball which may vary in pitch from a "good length" to a "full-pitch," and in direction to a distance of about three feet from the batsman's legs and outside them. The rule for the stroke is simple enough—"throw your left foot towards the ball, and hit beyond the left toe as the ball passes." If such a stroke be well-timed, and catches the ball as it passes the toe, a delightful hit will be the result; all the more delightful because the striker may put his full strength into the "smite," and need not trouble himself about the risk of being caught. The ball flies away square or fine according to the pace of the bowling, and as it travels *behind* the batsman he cannot usually do much to control its direction or elevation, but as the range of the leg-hit is so large, he may trust to the chapter of accidents to escape being caught; one thing is certain, that if the ball is struck fair, the fieldsman is not likely to catch it, unless he happens to be standing in exactly the right place, for the hit, being more or less a "blind hit" to the striker, will also be a blind hit to the fieldsman, as he cannot place himself for it with any certainty.

The "draw," being obsolete, is only mentioned here for the sake of completeness. Old-fashioned players used to meet a short-length ball coming straight to the leg-stump with the

bat inclined, as for the "glance," the ball being deflected between the legs and the wicket; it was a risky stroke, though some batsmen made it effective.

The leg-hit as described is made with a more or less horizontal bat which "sweeps" the ball away: but the bat may be kept perfectly straight and the body perfectly straight, the ball being struck just before it reaches the striker, whose left leg is drawn up close to the right: the resultant stroke, if accurately timed, is one of the most brilliant that can be seen, but it requires a combination of strength and accurate timing and exact length which are not to be met with every day. When all these requisites meet, a huge hit is the result.

Leg-hitting is more or less a natural gift, and some batsmen never attain it: for them the most effective stroke is the old "Cambridge poke"; no attempt is made to *hit* the ball, but rather to push or guide it, in front of the wicket or behind it, according to the position of short-leg, if there is one.

The Pull—The term "pull" is applied to a stroke which is more practical than orthodox, and which brings a straight ball or an off-ball across the wicket to the on-side. It is dangerous to the batsman, inasmuch as it cannot be done with a straight bat: to the bowler, inasmuch as it is more or less unexpected, and usually sends the ball to an unguarded part of the field; but the batsman is more likely to suffer than the bowler, and consequently the stroke can only be recommended to a batsman of large experience, who is also blessed with a quick, sure eye.

General Remarks—The batsman's first object should be to defend his wicket: his second, to do what damage he can to the enemy by scoring runs. The two things may, however be reasonably combined, and a defensive stroke if played with determination and power, may, and often does, result in the acquisition of runs. Hence every ball within a certain limit should be played hard: the bat should meet the ball, and not be struck by it, though in the contest between the hand and head of the bowler and the hand and head of the batsman, the former often has the advantage, and the latter has to be satisfied with merely arresting the ball's progress. "Shooters" [*see* GLOSSARY] are rare nowadays, thanks to the ground-keeper's care, but if they come, the batsman must be satisfied to stop them, and it is well, when playing forward, to keep the point of the bat so close to the ground as to smother a possible shooter. "Yorkers" do not lend themselves to scoring: they must be watched carefully, and most men play them by chopping down quickly at the place where they are going to pitch; but by playing forward —perhaps the best method—they may generally be met on the "full pitch"; in any case the batsman should be content with merely stopping them.

In both back- and forward-play the bat and left leg should be so close together that the ball cannot pass between them.

One of the bowler's devices is to bowl about a foot outside the off-stump, keeping a good length, to induce the batsman to hit more or less wildly at the ball, and to hit it into the air. The best way to meet this artifice is to hit the ball fair and square in the middle of the bat, and when the batsman is well set this may be done with success, but experience will teach him that great care is necessary, and that there is a ball of a particular length which cannot be struck at without danger. This rule, however, is reduced to an absurdity by some men, who refuse to "let go" at anything between a long-hop and half-volley, and who, when the intermediate ball comes, merely step in front of the wicket so as to protect it with their legs in case the ball breaks back. This may be magnificent, but it is not cricket: it is a loss of opportunity to let any off-ball pass without an attempt at a stroke, save that one which, if straight, should be merely played, without an effort to force it away: at the same time, the best and safest way of meeting a slow, leg-break bowler is to get in front of the wicket—thereby defending it with the legs—and to sweep the ball round to the leg-side, always supposing that the ball pitches on that side.

The batsman should always be comfortably settled to receive the ball before the bowler begins to run. He should, directly the bowler is in position, rivet his glance on the ball and never lose sight of it till it has struck the bat. Too much importance cannot be attached to this habit of observation, and "Be ready in time" is an invaluable maxim. If the bowler is fidgety at the post and bowls before the batsman is quite ready, the latter should draw away and refuse to play the ball: if the wicket is hit, no harm is done. If spectators, or one of the fieldsmen, are behind the bowler's arm, they should be asked to withdraw, as they may catch the eye of the batsman and distract his attention, as well as interfering with his sight of the ball: but the umpire is bound to stand so as to get a clear sight from wicket to wicket, and the batsman has no right to demand, as many do, that he should stand out of the line of sight.

The art of running between wickets, without coming to a misunderstanding with one's partner, is indispensable. The rule is simple—the striker calls for all strokes in front of the wicket, his partner for all strokes behind the wicket. Some players make an exception to this rule in the case of a stroke to "third man," for the striker has a better view then of the direction of the ball than his partner; but even here the non-striker should have the right of calling the run, as his is the greater risk: but it is well to arrange with one's partner on going in, who is to call for the stroke. Directly a ball is struck the batsman

—whether striker or non-striker—whose business it is to call, should shout—sharply, quickly, and distinctly—"Come!" "No!" "Not yet!" as the case may be. It is well to add to the word "Come!" the number of runs that seem likely to be got for the stroke—*e.g.*, "Come one!" "Come two!" and the like; in fact, every information should be given to one's partner that may help him in running, but in all cases it should be regarded as a golden rule that the man who runs the risk of losing his wicket has the right of calling or refusing a run. If the non-striker has to call for a sharp run, he should be prepared to stop, as the striker may not be in a position, especially if his legs are far apart, to start at once.

The non-striker should always "back up," *i.e.*, should always follow up the ball for a yard or two towards the striker's wicket, so as to get a good start in the event of a possible run, but he must be careful not to leave his ground till he has *seen* the ball leave the bowler's hand [*see* LAW 35], nor to go so far that he cannot regain his ground in case the ball be driven straight back, for then, if he has not made good his ground and the ball, having first touched the bowler, hits his—the non-striker's—wicket, he would be run out. With a hard-hitting partner it is well not to "back up" too far, as there is a danger of being struck, if the ball is hit hard.

If a misunderstanding occurs between the batsmen when running, the one who has made the mistake should give way and allow himself to be run out, but there is a generous feeling among cricketers that the worse batsman should sacrifice his wicket in the interests of his side, even if the error is not his, and that the batsman who is "well set" should be the survivor.

The fieldsmen should be carefully watched by the batting side, both when actually batting and in the pavilion, to note and record which are good fieldsmen and good throwers, and which are left-handed men. If the ball goes to the "wrong" hand, a run may often be got; or to a man who is standing a long way from the wicket and has been noted down as a bad thrower.

Some batsmen are famous for "stealing" runs, (*alias* "running short runs"), when the ball is only hit a very short distance. This practice, it is true, often demoralises the fieldsmen, but usually does more harm to the batsmen, who run themselves out of breath and are very liable in the excitement of the moment to commit an error of judgment which results in the loss of a wicket. It is a bad speculation to risk a wicket for a run, and the worst way to get a run is to run out one's self or one's partner.

Every batsman should jealously inspect the condition of the turf at his wicket when an over is concluded. Fragments of grass and turf should be removed, as likely to make the ball "jump" or "shoot": on a soft wicket the marks made by the ball should be gently tapped flat with the end of the bat; if the turf is very soft, it is a mistake to hammer it with the back of the bat, as such a process makes a pulp of the ground in the immediate neighbourhood. The process of clearing the ground of *débris* is known to cricketers as "gardening."

All superfluous "flourish" is fatal to good "timing"; such flourish may appear very graceful to ladies and such spectators as do not understand the game, but to the cricketer's eye it is not only a meretricious, but a dangerous ornament, especially when the wicket is "tricky"; and this seems a convenient opportunity for saying a word on the different conditions of the ground, and their effect on batting and bowling, for in the natural course of events what is good for the bowler is bad for the batsman, and *vice versa*.

The condition of turf which the batsman loves—and the bowler dreads—is produced by a succession of hot days on a smooth, level, close-shaven ground, on which the grass is not too thick. On such a wicket the bowler is comparatively powerless, as he cannot make the ball break to any appreciable extent; and it comes true and fast, never more than about a stump's height from the ground, so that the batsman need not worry himself about eccentricities of curve, but can, and should, play boldly forward at every ball which is not a long-hop. A thunder-shower may change the whole course of procedure, if the sun shines hot and bright when the tempest has passed. At first the ground, wet on the surface and hard underneath, gives the bowler no help—especially as the ball is wet, and his footing precarious—while the ball "cuts through" the wet surface, and comes up to the bat fast and easy: but when the sun begins to tell, and the wet surface begins to cake, then the batsman's troubles begin, and the ball "breaks," "shoots," or "jumps," like an animate fiend, and sound cricket is almost impossible. Under such conditions the batsmen should run a few risks to score runs quickly (in cricketers' parlance, "to force the game") while they have the chance, and the judicious captain will send in his hard-hitters, with orders to get all the runs they can in the shortest time. It is hardly incorrect to say that a side, which might be expected to score 400 runs on such a wicket as was first described, would be well satisfied with 120 on a caked and crusted wicket, affected by rain and sun. A soft wicket, especially if the grass is still wet, is an easy one, from the batsman's point of view. It is of course hard to make the ball travel on the slow turf, and the bowler may be able to make it break considerably, but it comes so slowly from the pitch that the batsman has no difficulty in watching its eccentricities, and runs come surely, if slowly. Probably there is no condition which delights the

bowler's heart more than the "crumbly"—when a wicket, once hard and true, has begun to wear, and has a broken, dusty surface. At such times the ball gets a good grip of the crumbling surface, and not only dances about like an acrobat, but dances so fast that scientific cricket is difficult. Here, again, the batsman must realise the condition of affairs, abandon cricket "by the book," and hit out (not indiscriminately, but fearlessly and boldly) on the smallest opportunity. On this, as on the "caked" wicket, hay must be made while the sun shines, but whereas the "caked" wicket may recover, for the "crumbled" there is no hope.

It may be useful to remind the reader at this point that the remarks made about the batsman apply equally, but in a reversed sense, to the bowler. What is good for one is bad for the other, and as the contest is *à l'outrance*, each should make himself acquainted with the tactics of the other, so as to meet, and, if possible, defeat them.

The following paper, by K. S. Ranjitsinhji, *embodies some valuable hints on various points, the views of so practical and admirable an exponent of the game naturally commanding the cricketer's attention and interest.*

Batting.—A good and easy position at the wickets is highly important; by "good" being meant such a position as experience has shown to give the batsman the best chance of combating the bowling; by "easy," a pose which is in no way stiff or constrained, but allows the player to move arms, legs, wrists, and the whole body with readiness and freedom. As to the placing of the feet, sufficient has been said before (p. 219), though it may not be amiss once more to emphasise the importance of keeping all the weight upon the right leg when preparing to receive the ball. Any weight upon the left must delay, if only for a moment, that rapid advance of it upon which, to a large extent, correct timing must depend. As to the hands, the left hand should grasp the bat so near the top that the ball of the thumb rests against it, and the right hand should be brought up as close as possible, provided that the left be allowed to twist round without catching the glove, when the batsman plays forward. There is nothing that cramps the style more than a grasp too low down the handle, and the best that can then be expected is a dogged defence.

It is impossible to lay down general rules as to when back-play or forward-play should be employed. On this question it is hopeless to expect complete agreement, and all that can be done is to state one's own practice, without any dogmatic assurance that it is necessarily the best for all. It seems to me that the school of cricket that was supreme, roughly speaking, from 1875 to 1885, was too sweeping in its advocacy of forward-play, and looked upon back-play as a mere device for defence, instead of being, what it may often be, a most rapid and effective way of scoring. Of course, to a fast ball well pitched up, say, dropping six yards from the wickets, it is almost necessary to play forward, but to a batsman blessed with a good eye and supple wrists, the extra two or three yards, through which a short-pitched ball may be watched, give a very great advantage. In playing forward, one is compelled to trust to the judgment formed from the flight of the ball before it pitches, and the bat itself obscures the sight of sudden developments.

In playing back, one must be prepared to draw the right foot back freely and promptly. The absolute fixity of that leg is undoubtedly a golden rule for the beginner, but it is a mistake for the experienced batsman to regard it as a law which may in no case be broken. Let him, if resolved to play back, slide the right leg towards the wicket, *not* putting it in front of the stumps, and always remember to keep the bat and play the ball, *in front* of that leg. This will save him from all danger of hitting his wicket.

The cut is a stroke which is certainly not used to the extent that it deserves, and this for two reasons. The first is the modern habit of letting balls go by upon the off side that seem at all dangerous, without the least attempt to hit them. The custom has grown almost to an absurd extent, and bowlers, encouraged by the timidity of the batsman, send down unharmed ball after ball which ought to yield plenty of runs. As a general rule one may say, "Never let an off-ball pass without striking at it, if it be within anything approaching to easy reach." If the batsman step well across, and get fairly over the ball, he has every chance to score, and if it should bump, he has complete control of the bat, and should be able to avoid a dangerous stroke. One may often see a batsman let off-ball after off-ball pass his wicket, and then, at last screwing up his courage, hit one, precisely similar, to the boundary, a feat which he might have performed earlier with much advantage to his side.

The second reason of its rarity is the small attention that the majority of batsmen pay to the placing of the ball in the stroke. Most men are content to cut it square, or almost square, direct to the hands of point or third-man, who find little difficulty in dealing with it; but if a little more care were taken, and the ball struck a fraction of a second later, it would be quite as easy to steer it safely through the slips.

In leg-hitting, one of the chief things to remember, when a ball is coming upon or outside the legs, is that a long innings is a very exhausting business, and that it is a waste of energy to smite furiously at the ball, when a

slight change of its direction will secure the object equally well. There is no more effective stroke on the leg side than the "glide" or "glance." To make it, put the bat well forward, not square with the course of the ball, but at an angle that will vary with the direction in which the ball has to travel after the stroke so as to avoid a fieldsman. Just as the ball touches the bat, a quick turn of the wrist sweeps it well away behind the batsman, and, in the stroke, the whole body should pivot upon the right toe, as in the conclusion of a golfing drive.

Some men have the dangerous habit of jumping round to a leg ball, instead of swinging upon the right leg: it is dangerous, because, when bowler and wicket-keeper understand one another, the former may deliberately send a ball up to the dancer upon the leg-side, and put him in great peril of being stumped while his right foot is in the air.

The "pull" also is a stroke which every batsman should learn, as there is none more demoralising to the bowler, and none more necessary to have at one's command when the wicket is very bad, for naturally, as this stroke sends the ball where it has no right to go, it finds a place where a fieldsman has no right to be, and therefore scores. At the same time, though an important stroke, it is most dangerous, and requires to be conducted, as all others, under rule. One may assume that any first-class batsman can pull a very short-pitched ball with ease and safety, and place it where he likes, and much the same applies to the full-pitch, unless it be very fast, but the difficulty arises when the ball is of a fairly good length. One should *never* attempt to pull a half-volley, for the risk of being bowled is enormous, but if the ball be a little short of it, and a pull be necessary, throw the left foot right across the wicket, and sweep the bat round the toe, taking especial care to keep the ball down.

There is perhaps a danger that batsmen may get too orthodox, and throw away possible chances of winning a game by a refusal to take any risks at all. As a general rule, especially if the wicket be bad, and not likely to improve, it is well to hit at almost everything. Three fours in five minutes, and then retirement, will do more to help a side than remaining at the wickets for an hour for ten, even though the difficulties faced and surmounted may have been enormous: for there is very little chance on a bad pitch of the bowlers getting tired out. There is, however, one moment at which the average batsman is a little too much inclined to force the game, and that is when a lob bowler is put on, but there is no more reason for contempt than there is for the panic he occasionally inspires. To every ball well pitched up the batsman may fearlessly walk out, take it on the full-pitch, if possible, and place it along the ground for a single or a two. If the bowler pitch them short, one may step back and gently place them where seems best; the only dangerous method is that which tries to secure enormous hits off every over.

If, however, the batsman should wish to make a big drive (and this applies to all bowling, not merely to lobs), by all means let him jump in to meet the ball, so as to get it on the half-volley. Some advocate the "fast-footed" style of hitting, but though this makes the risk of missing the ball slightly less, it is almost impossible, as the ball is met on the rise, to prevent it from soaring. It may go over the fieldsman's head, but the risk of giving a chance is great. By jumping in to meet it, the batsman hits the ball at the moment when it pitches, and, the body being well forward, he is less likely to get under it.

A word may be useful as to fielding at those difficult places, point and short-slip. Slip should never take his eyes off the ball, from the moment the bowler starts his run to the time when the ball is safely held. He should not attempt to watch the batsman at all. Point, on the other hand, if the bowling be fast, does well to draw conclusions, from the way the batsman is framing, as to the direction of the hit. Both should make every experiment possible in order to find exactly what distance from the wicket suits them best to stand. Many a man finds out that at a particular spot he can take the ball with fair certainty, but that if he stand a yard or two nearer, or further away, he is almost helpless. It is well to remember that the ball can only be caught by the *fingers*, as near the palm as possible, and that it should never be allowed to hit the palm, for from there, in all probability, it will bound off to the ground. In any case, let the hand be beneath the ball, and never try to grasp it from the top, or sideways.

K. S. RANJITSINHJI.

The following paper by F. G. J. FORD (*of the Cambridge and Middlesex elevens, and of A. E. Stoddart's Australian eleven*) *on "Left-handed Batsmen," may here be appropriately introduced.*

Left-handed Batsmen—The appearance of a left-handed batsman is always an aggravation to the fielding side, and his dismissal is generally greeted with corresponding signs of gratification. As will be seen hereafter, it is not so much the number of runs he makes, as the general effect he produces on the *morale* of bowler and fieldsmen, which influences the state of the game. The incessant and necessary change of position whenever an odd number of runs is made by a hit is as trying to the temper as it is to the physique, and as demoralisation, more or less temporary, is likely to follow, it is perhaps fortunate that these sinister cricketers are not numerous: they are certainly not beloved of the opposition. Among individuals the trouble and responsibility are

most severely felt by bowler and wicket-keeper. The latter always seems to find an increased difficulty at his post, as a proof of which it is not uncommon to find him standing back for the left-hander, but close to the wicket for his companion, as the whole game has now become "wrong-handed" for him, and many a snick from the left-hander's bat is allowed to pass, when the right-hander might not have escaped. Even short-slip and point sometimes find it less easy to follow the ball as it leaves his bat. But it is the bowler on whom the chief difficulty falls. A special mental effort is required of him, created by the task of ridding his side of the obnoxious player. He is troubled in various ways. Accustomed to pitch the ball persistently on the off-side for a right-handed man, he has now to suit himself to the altered conditions, and to pitch the ball on the leg-side. Easy enough for a ball or two, no doubt, but when singles are being rapidly made, and the bowler has constantly to alter his tactics and the direction of his bowling, length and pitch are apt to suffer, to the benefit of both batsmen. Many right-handed bowlers cannot bowl over the wicket to left-handers, and they are seen bowling round the wicket to the one batsman, but over to the other. A left-handed bowler especially dislikes bowling to his left-handed opponent. The reason is simple enough. His favourite break-back is eminently liable to be "pulled," and to avoid this he will generally be found bowling over the wicket to the left-handed instead of round—a practice which is quite novel to him, and correspondingly difficult. To the best bowlers these difficulties may be comparatively slight, but it is not uncommon for a good captain to take a left-handed bowler off when a left-handed batsman comes in, often to the advantage of the latter's colleague. It is to such constant yet necessary changes as these that the left-hander owes his advantage—changes which help to demoralise the man and spoil his bowling.

A left-handed batsman enjoys a reputation for certain strokes as being peculiarly his own. In particular, he seems to have many more driving strokes—not *cuts*—that range between third man and extra cover, than have right-handers, due perhaps to the fact that a ball breaking away to the off is better adapted to this class of stroke than a ball coming in from the off. As left-handers for the most part meet right-handed bowlers who break back, they naturally get more practice for such strokes, and develop their talent in that direction accordingly. For off-driving purposes a right-hander certainly prefers a left-handed bowler, who makes the ball go away from leg to off, and similarly the left-hander loves medium-paced, right-handed bowling, which he meets so frequently, that constant practice thereat has made these off-strokes a prominent feature of left-handed play.

One service in particular the left-hander is specially adapted to lend his side, and that is the checking of the successful attack of the slow right-hand bowler who bowls with a strong break from leg. The right-hander who steps in to drive takes two risks—the risk of a "miss-hit," and the risk of being stumped, the chance being generally quite simple; but the left-hander, if he misses the ball, has a second line of defence to fall back upon, viz., his legs, and if the ball does come to the wicket-keeper, the chance, being probably on the leg-side, is neither very visible nor very easy.

Hence it is not merely the left-hander's score, but his mere presence, that fieldsmen resent, and should his stay be a long one, he may materially alter the course of the game. No side is quite complete without such a batsman, if he be of good quality, though there are not many first-rate left-handers to be found. It is politic to send one in to bat, *ceteris paribus*, if it is desired to spin out time; and, on the other hand, he should not be sent in, even if a fast scorer, when time is precious, as many valuable moments are lost during the necessary chopping and changing of the field.

F. G. J. Ford.

Bowling.—An excellent and instructive paper on the subject will shortly be introduced from the pen of T. Richardson, the famous Surrey and England fast bowler, who was also a member of A. E. Stoddart's Australian Eleven. The questions of "length," "break," and "accuracy," are there exhaustively dealt with, but as the author dwells mainly, and naturally, on fast bowling, a few lines on other points may not be out of place.

Bowlers are classified (1) according to their action, as "Under-hand," "Round-hand," and "Over-hand" (the word "arm" is often substituted for "hand"); and (2) according to their pace, as "Fast," "Medium-paced," or "Slow." In "under-hand" bowling the arm is not raised above an angle of 45° from the body; in "round-arm" it must not be lifted more than 90°; if the arm is raised higher the bowler is an "over-hand" bowler. At different times legislation restricted and limited the height to which the arm might be raised; at present there is no limit save that imposed by Laws 10 and 48A.

So little is seen nowadays of fast under-hand bowling that the batsman who suddenly encounters it, is often "surprised" out. The real difficulty lies, not in the bowling itself, but in the meeting of it; the eye, accustomed to look up towards an upraised arm, does not at once accommodate itself to the altered conditions which suddenly require it to look down; consequently the golden rule already given of "Watch the *ball* from the moment the bowler begins to run" will be found invaluable. It is

rarely met with except in rustic matches, where some village champion often defeats cricketers of a high class; as a matter of fact, he "surprises" them out, or they get themselves out by their own carelessness, or by contempt for the bowling. Most fast under-hand bowlers bowl a large proportion of "sneaks"—balls which seem to cling persistently to the ground, sometimes with an awkward curl or break. The best way to play them is to watch them well, to "place" them if crooked, and to play out or hit out with the point of the bat close to the ground. If they only bound once, they seldom rise more than half-stump high, and may be played with the utmost ease; if they are "many-bounders" hard forward play will always meet the case, the only risk being that of being caught by the bowler, or mid-on, or mid-off; judicious "placing" on the leg-side will secure many a run.

No slow bowling should be played "fast-footed"; in other words, the batsman should always be ready to step or jump in towards the pitch of the ball, *unless it be on the off-side* (*see* p. 222), but when "lobs" are introduced the batsman can do as much with his feet as with his hands. "Lobs"—slow under-handed bowling—are invariably terrible to the timid batsman, partly because a certain amount of humiliation is, without any reason, attached to a failure to cope with them; yet good lobs require as much care and pains as any bowling. In pace they should vary with every ball, and both leg-break and break-back—especially the former—are to be looked for, but, as bowled nowadays, they have seldom a great deal of spin, and should be met on one absolute principle—"hit them on the long-hop or the full-pitch." In the former case the batsman keeps himself back and "places" or "pulls" them; in the latter he runs out, and—does the same thing. To play forward is dangerous; to hit them on the half-volley is delightful, but entails a certain amount of risk. But in no point of cricket is so much individuality displayed as in the playing of lobs.

It may seem strange to have included the last two paragraphs under the head of "Bowling," but instructions to the batsman are in an equal degree instructions to the bowler, if they be read aright; consequently it will be the lob-bowler's aim to keep so sound and true a length and such a pace, as to induce or compel the striker to play forward. Nothing however should be so disconcerting to a lob-bowler as to be consistently placed past the fieldsmen for a single. A half-volley hit to the boundary should inspire him with hope, but a series of well-placed singles should convince him that his efforts are vain.

It may be added that a lob-bowler who depends, as most of his kind do, on the leg-break requires but few fields on the off-side; point, short-slip, and third man may be compendiously represented by a sort of third man, about six yards from the wickets.

We may now pass to the classification of bowlers according to their pace, premising that the words "fast," "medium," and slow," refer to the *general* pace of the ball as delivered. A "fast" bowler may bowl one "slow" and one "medium" ball per over, and a slow bowler one "fast" and one "medium," but the pace of three balls in the over will be "fast" in the former case, and "slow" in the latter.

For all questions connected with fast bowling, and for many questions associated with medium and slow, the reader is referred to the following paper by TOM RICHARDSON.

Fast Bowling—The fine batting and good wickets of the present day are doubtless the cause of the improved condition of modern bowling, but the acquisition of the art demands not only long and patient training, but a physical capacity and natural aptitude such as are not given to every man. Further than this, nerve, good temper, and pluck are quite indispensable. It is a question whether he who bowls well as a boy also bowls well as a man, as the attendant strain is certainly severe, but the writer certainly developed in youth some of the break and spin which have helped him to his later successes.

The first thing to learn is to bowl straight and to bowl a good length, and this power is probably natural and not acquired, though nature requires the assistance of perpetual practice. But the bowler, whether born or made, should cultivate or acquire a high action and a good swing of arm and body, as such a delivery will make the ball rise quickly and perpendicularly from the pitch: but the action must at all costs be easy and free, qualities which neither imitation nor education must allow to disappear.

For early practice nothing is better than to bowl, the arm raised as high as possible without strain, at a disc of paper, the size of a crown-piece, placed at the proper distance from the wicket. It is impossible to state exactly what this distance is, as it depends on the pace of the bowler and the nature of the wicket, to say nothing of the height and play of the batsman; but on a fast true wicket the bowler, if he be a fast bowler, should try to pitch the ball about four to five yards from the popping crease, *not less*, for a batsman of about 5 ft. 10 in. in height, the pitch being shorter or longer according as the batsman is tall or short, but to bowl, as some men do, about six or seven yards from the crease is to bowl with the idea of hurting, or at least frightening the batsman, which is contrary to the spirit of the game. If the wicket is slow or sticky the ball may be pitched at least a yard further up, as the rise is more abrupt. In the case of a slow or medium-pace bowler the ball should be pitched further up than it is by a fast bowler, to prevent the batsman from having time to step back and pull the ball.

Accuracy and length are the essentials of bowling, and till they are acquired break may be left alone, but for the first-class bowler a combination of the three things is absolutely necessary; so it is now assumed that the first two have been fairly perfected, and that the question of break and spin remains.

Break and Spin—A ball is said to break when, on touching the ground, it deviates sharply from its original line of flight. When it is delivered by a right-hand bowler and twists from the off to the leg, it is said to "break back"; when from leg to off, it "breaks from leg"; but a left-handed bowler's "break-back" twists, for a right-handed batsman, from leg to off. It will be observed also that the ball, delivered round the wicket, may, in its natural line of flight, which is not parallel to the line of the wickets, hit the stumps even if it does not pitch on a line drawn from wicket to wicket. This ball is said to "go with the arm," and a slight amount of leg-break is often combined with it.

A ball is said to have "spin" on it when it gains an acceleration of pace, not necessarily a variation of direction, on touching the ground. Such "spin" is generally a natural gift, due to a practically unknown peculiarity of delivery, and there are probably few men who can make any given ball spin at will.

"Break" is occasionally natural, but most frequently acquired, and it is caused by giving rotation to the ball as it leaves the fingers, the break-back being the most easy to acquire. In the following remarks the bowler is supposed to be right-handed. To make the ball break back, it must be made to rotate from left to right, which is in most cases effected by holding the ball with the fore-finger round the seam; at the moment of delivery this finger and the wrist turn outwards, *i.e.*, from left to right, so that the back of the hand is downwards after the ball has been released. Some men put this break on with the middle finger; indeed every bowler finds out his own best method, but the foregoing description will be a useful preliminary hint.

To make the ball break from leg, it must be held more in the palm of the hand, and the rotation must be from right to left. The third and little fingers produce the rotation and the hand turns over with the ball, the back of the hand being now uppermost. It may be added that accuracy with the leg-break is very hard to acquire.

It is most important that a bowler should be able to vary his pace, unobserved by the batsman. To do this, the action and run must be the same as before, but the ball should be allowed to drop back from the fingers into the palm, and the shoulder-blade restrained. The result will be a slower ball, but it must be tossed a little higher in the air and pitched rather farther up to complete the deception and induce the batsman to play forward to it and mistime it. This art of variation of pace is not easily acquired, but it is invaluable, especially when the batsman, having made a fine drive, can be induced to try to repeat the stroke on the deceptive slow.

The following are different balls which the fast bowler should have at his command.

(i.) The good-length ball, already explained.

(ii.) A very fast, short-length ball, just on the off-stump, or just outside it, often tempts the batsman to hit too hard at it, and, mistiming it, to hit a catch to the slips or wicket-keeper. Care should be taken not to bowl such a ball at the batsman's body.

(iii.) The "yorker" is most useful. Its exact pitch varies according to the batsman's height, but it may be said, generally, to pitch between the creases. No man can score off it with any certainty, though to the good batsman it presents no special terrors. Its chief merit is that it may catch him off his guard for the moment, with disastrous results. It is a capital ball to give a batsman when first he comes in, but as it entails special exertion it should only be bowled as a variation, in which its chief merit consists, and not continuously. Two variations of the "yorker" demand a word; cricketers know them as "the curling yorker" and the "running-away ball." Both of these curl in the air before touching the ground, the first from the off, the second from leg. The former occurs more frequently with a cross wind, the second when the wind is directly against the bowler. No bowler, it may be asserted, can bowl either ball at will, though base-ball "pitchers," who "chuck" or throw the ball, have ample command over the curve, while to some bowlers the "curl in the air," however produced, is natural; yet it may be positively stated that no bowler can make any given ball take this peculiar flight. If, however, the bowler, bowling with a cross or head wind, finds that a ball, well pitched up, seems to curve in the air, he should pursue his advantage, as such a ball is most perplexing to the batsman.

(iv.) The "full-toss," or "full-pitch," pitches right on the wicket, and is useful as a variation to keep the batsman on the alert and prevent him from settling down.

When once a batsman is "set," the bowler must try every device in his power, the head aiding the hand; least of all must he lose heart. No wicket is impregnable, and he must storm at the fortress till he brings about a capitulation, remembering for his comfort that many a bad ball gets a wicket. The bowler should at all times see that his fieldsmen are properly placed, and especially, if he be a fast bowler, short-slip and cover-slip; the former about three yards deeper than the wicket-keeper (who is supposed to be standing back), and a yard to his right; cover-slip is about a yard deeper than short-slip

and a yard to his right. If a batsman is known to "cut" finely, third man may well field on the boundary, especially if the ground is hard.

To get the full value out of the off-break, the fast bowler especially should bowl over the wicket, but he should train himself to bowl on either side, as a variety: indeed many fast bowlers always bowl round the wicket to a left-handed batsman. Throughout this paper, it should be noted, the writer has had right-handed men in his mind.

The bowling of the present day is largely affected by the perfect wickets now provided, this perfection accounting in the main for the large scoring. They render the bowler's, and especially the fast bowler's, task hard indeed. Mere straightness, in consequence, is almost useless unless the bowler has some variations at his command. On the extraordinarily hard, true wickets which prevail in Australia, the fast bowler cannot be said to be a great success. He has to adapt himself to the changed conditions and bowl a much shorter length, owing to the greater speed with which the ball travels on to the bat, making what would be a good-length ball in England almost a half-volley, or at any rate one that lends itself to be driven. In England it is a hard task to bowl out good batsmen, but in Australia that task becomes herculean.

The paucity of really good bowlers compared with the number of first-class batsmen is a matter for surprise and regret. The reason is not far to seek, and may be found in the fact that much more pleasure is derived from learning to bat than to bowl, and in the case of amateurs the ball is almost neglected. With regard to professionals the fault lies not so much in the aspirants themselves as in the habit which prevails in many counties of having a "Colts' match" early in the year, when the weather is cold and the young players out of practice. Then, the match being over, and no one, as is natural, having distinguished himself, the "colts" are relegated to obscurity. The county which looks to the future, which keeps an eye on its recruits, which subsidises them by retaining them as "ground bowlers," and which supports a well-organised "second eleven," will surely reap its reward.

T. Richardson.

Medium and Slow Bowling—The medium-paced bowler is a bowler of varied paces, a bowler who, in cricket language, "mixes them," that is, seldom bowls two consecutive balls of identical pace and length. If, however, he detects a weak spot in the batsman's defence, if he sees that a ball of a particular length and pace puzzles and perplexes him, he should give him that ball at least once an over, following it up with something of an entirely different nature, either much faster or much slower, but the alteration in pace must be concealed, as far as possible, at the moment of delivery. A slower ball may be delivered and its pace concealed by checking the arm at the instant before delivery; a fast ball by swinging the arm further back, the pace of the run and the usual action being kept as far as possible. Needless to say, the variations of pace must not follow a stereotyped sequence of order. It is a good variation to deliver the ball with the arm raised sometimes as high as possible, sometimes almost at a right angle with the body. If the bowler can make the ball break both ways, he would of course use the two breaks at different intervals, and it is well to vary the *amount* as well as the character of the break. To a new batsman the first few balls may well be bowled without any break at all; he may imagine that in the existing condition of the wicket the bowler cannot make the ball break, and an unexpected "break-back" may secure his wicket. A very useful ball, from the slow bowler's point of view, follows two or three break-backs which have pitched, at a good length, a few inches outside the off-stump. It should pitch at about the same length, have no break, and be somewhat faster, so as to conceal the absence of break; if the batsman fails to realise the situation, a catch at the wicket or in the slips is very likely to follow. In fact, to lay down a general maxim, it is good to make the batsman think that the bowler is mechanical and to induce him to be mechanical too. This effected, an unexpected motion on the part of the bowling-machine may have a very surprising result on the batting-machine. But the contest is one of brain *versus* brain, as well as of hand *versus* hand, and the better man, for the time being, will win. An important factor in the duel is the temperament of the contestants; there is the steady bowler as well as the steady batsman; the brilliant batsman finds his counterpart in the brilliant bowler. When two of the former type are in opposition, things rule dull for the spectators: when brilliancy meets brilliancy the whole game glows. Indeed, bowlers may be put, generally, into two classes: firstly, those who "pound away" on the principle that, "if you knock at the door long enough, some one is sure to open it;" secondly, those who are not capable of such machine-like regularity, but who make up for the want of it by an occasional flash of inspiration, by a ball that even the best batsman cannot meet. One essential every bowler who has any pretensions to the name must possess—a perfectly equable temper. It is desperately trying to have laid a trap for the batsman, to have lured him on to ruin, and to have led him to make the stroke that should have been fatal, and then to see the ball drop out of the fieldsman's hands; but it is at this moment that the philosopher must prevail over the man. No one is more mortified or more sad when a catch is missed than the erring catcher, but when the bowler adds to his

mortification by a hasty exclamation of disgust, that fieldsman is spoilt for the day.

It is often very useful to change ends and to change from one side of the wicket to the other. The former variation is subject to the approval of the captain, but the latter should always be tried when batsmen are well set; consequently every bowler should accustom himself to bowl on either side of the wicket. Again, when the bowler has a good command of the ball and the break, no device is more successful than to bowl several balls with a fair amount of break, and another with just a little more twist: the ball that gets the wicket is the ball that just gets past the bat and does not just get past the wicket; hence a very little additional break may have the desired effect. If, however, the wicket is "caked" or "crumbled" (*see* p. 227), a change —for a "break-back" bowler—from "over" to "round" the wicket is often useful, as the ball is not so likely to miss both bat and wicket.

One maxim the slow bowler, and indeed the medium bowler, should lay to heart, viz., that a short-length ball seldom bowls a man, but that an over-pitched ball is often fatal, and that a series of half-volleys is more likely to succeed than a series of long-hops.

Above all things, a scrupulously fair delivery should be cultivated, free from all taint of suspicion of "throwing." To define the difference between throwing and bowling is most difficult, but the accompanying plates may supply a clue,

FIG. 11*a*.

as they are reproduced from photographs specially taken.

In Fig. 11*a* a "fair" delivery is shown; the arm is almost straight and swings with the body; in Fig. 11*b* it is bent at the elbow, and the elbow, instead of following the swing of the arm, is stopped at the body with a jerk, which

FIG. 11*b*.

stoppage and jerk are, in the writer's opinion, the essential points of a throw. It is right to add that what seems a throw to one man seems perfectly fair to another, and that bowling which seems unfair from one point of view (*e.g.*, from the side or back of the bowler) may seem perfectly fair from another, the batsman, strange to say, having often the worst chance of judging, owing to the "fore-shortening" of the arm.

It is most important that the bowler, directly he has delivered the ball, should hurry back to his wicket—always supposing that he is not called upon to field the ball or make a catch—so as to receive the ball when thrown up by the fieldsman, being careful to keep the wicket between the fieldsman and himself. With this in view all bowlers should practise how to "take" the ball and "put the wicket down" quickly and smartly. As the bowler's hands are unprotected, this may imply some hard knocks, and if the bowler knows that the fieldsmen are "backing up," he may, to save his fingers, let a hard throw go by, unless there is a chance of getting a wicket, for which purpose he must take any and every risk of being hurt.

An opportunity of running a man out under Law 35 occurs but seldom, but it may be watched for, and there is nothing unsportsmanlike—as some people hold—in exacting one's strict rights, to say nothing of the fact that the batsman who backs up too soon is taking an advantage of the bowler to which he is not entitled.

Finally, the bowler should not forget that he

has ten men to support him, and that there are more ways of getting a batsman out than clean bowling him. A hard hitter may be tempted to hit a half-volley into long-field's hands, or, in

FIG. 12.

trying his favourite drive, to mistime or miss-hit the ball. A man may have a special stroke for a particular ball; it is often useful to tempt him to try this stroke early in his innings, and before he is well set. But as the devices of the bowler are best learned by experience, the beginner will gradually acquire them for himself, but he should early accustom himself to note the style of the opposing batsman and to observe which balls seem to puzzle him, and which balls he plays or hits with ease.

Fielding—It is not given to every man to be a brilliant fieldsman, but as good fielding, both catching and "ground-fielding," is essential to any one who has even second-class pretensions, it should be carefully practised; there is no better practice than for four or five men to go out and to take it in turns to hit the ball either in the air or along the ground to each other. It is well to take out several balls, and to vary the distance between striker and fieldsman. It will soon be found that nerve and courage are necessary as well as agility and alacrity, and that the art of catching can be largely improved by practice. Nerve, activity, and accuracy are therefore essential—nerve for facing a hard hit, activity for getting to the proper place to stop it, and accuracy for returning it hard and straight to the bowler or wicket-keeper.

Catching—This should be practised at all distances from the striker, in every possible position relative to him, with both hands together, and with right and left separately. The fieldsman should carefully watch the batsman, as his motions generally give a clue to the direction of the hit; but short-slip and cover-slip should watch the bowler, as the ball when it comes to those places is seldom sent there intentionally, and the batsman's movements give no hint. No rules can be given for sharp, low hits to fieldsmen standing from seven to thirty yards from the wicket; each man will find out by observation and practice what method is easiest for himself, but a one-handed catch may well be received on the middle joint of the middle finger, when the other fingers will form a sort of cage to retain the ball; other men prefer to take it on the lowest joint. Again, it is sometimes useful with a hard-hit catch, far from the body, to try to break its force by knocking it up a little way into the air, but there is a distinct risk attaching to this process, unless practice has made the fieldsman an adept at it, and the catching of hard hits, which come to the hands like a flash of lightning, is more a matter of instinct than of instruction. Fig. 12 is a good illustration of a sharp, low catch as it comes to point or slip. In all catches it should be remembered that the ball should be allowed to strike the hand, which should then give with it slightly so as to break the force of its impact. Any "grabbing" at the ball is almost invariably fatal and is likely to knock the ball away. Long fingers and a lissom wrist are a great adjunct to good catching.

If the ball is hit high, the first thing is to

FIG. 13a.

judge the true course of its flight and the place of its descent, as naturally it seldom singles out the fieldsman. This "judging" must be instinctive and instantaneous, and must be followed

by a rapid run to the place of descent, the fieldsman, if possible, getting to the place and steadying himself for the catch, which, if all goes satisfactorily, will be effected as in Fig. 13*a*, where the fieldsman has just caught the ball in the long-field. The sides of the hands are close together, thumbs uppermost, forming a sort of cup, and the wrists held close to the body so that the ball may be "hugged" (Law 22) if it jumps out of the "cup." The wrists should be allowed to give a little as soon as the ball is felt. Fig. 13*b* shows a one-handed catch in the long-field.

All these preliminaries are only occasionally possible, so the cricketer must accustom himself to rushing at catches at all sorts of distances from him and on all sides of him, holding them as best he can; and if there is any one maxim which should be writ large in his mind it is "Try for every ball hit towards you, whether in the air or along the ground." Many a wonderful catch has been made which the fieldsman never thought he could even reach, still less hold, but which he tried to reach and catch. Occasionally a few runs may thus be lost, but the chance of a wicket is worth a risk in runs, and even if the catch does not come off the fieldsman will have won the bowler's heart. When a catch is missed—as many catches are—the next thing to do is not to tear one's hair, but to throw the ball in; a man is occasionally run out by a sharp return from a missed catch; anyhow, the "hair-tearing" can wait. One more hint, "Never use one hand for a catch when both can *easily* be got to the right place"; but if a catch is nearly at arm's length from the body, it is sometimes easier to take it with one hand than with two. Experience is the only guide.

Ground-Fielding—If a ball is hit along the ground the first thing to be done is to stop it; but mere "stopping" is not sufficient; it should be stopped, and held, and thrown in without an instant's delay to bowler or wicket-keeper. The hand is the proper member to stop the ball with, but as the hand may be deceived, a second line of defence should be provided, viz. the legs. Hence, when possible, the fieldsman should stand full face towards the line of the ball, heels together—this is most important—and hands together in front of the heels. In short, the ball must be stopped at all hazards. But mere stopping is not always enough. If the ball is only moving towards the fieldsman at a moderate speed, and he remains stationary, it is clear that the batsman may have time to get a run, to avert which the fieldsman must not await, but meet the ball, dashing in at full speed, picking it up clean, and throwing it in. One attempt will convince the novice of the difficulty of doing all this when the ball is moving slowly. Augment the pace, and every difficulty is many times multiplied. The moral is, "Practise!" The beginner should, however, be warned against trying to be brilliant when, on the face of it, he can save the run without dashing in, as brilliant fieldsmen often lose runs by

FIG. 13*b*.

dashing at the ball and missing it, when "running" was the last thought in the batsmen's minds.

Throwing—Too high a value cannot be set on hard and accurate throwing, in which point many English fieldsmen, perhaps owing to the effect of a wet and chilly climate on the necessary muscles, are often deficient. The ideal throw comes into the wicket-keeper's or bowler's hands about six inches above the wicket; from a distance of thirty yards or less it should go straight from hand to hand; from longer distances it should be thrown on to the ground, but so as to be a *long-hop* to the receiver; any other "length" is very difficult to handle. From long distances it is a waste of strength to throw a ball high—a low, skimming throw is far more useful, and reaches the wicket quicker. The ball should be thrown, too, directly it is fairly in the hand, as a long preliminary "wind-up" is wasted time; the batsman, unable at once to judge the accuracy of the throw, dare not start when it is seen to be on its way. It is very useful to be able to hit the wicket, but only rarely should the experiment be tried. If the wicket-keeper knows his business, the time wasted in catching the ball and breaking the wicket is infinitesimal; if, however, time is very precious, the fieldsman may throw at the *top*, and the top only, of the stumps. Especial care should be taken to spare the bowler's fingers as much as possible.

A cricketer should be able to take any place in the field to which the captain may ask him to go, but after some experience he will probably find that some particular position suits him best, and to that place he should go whenever he has the opportunity. In case either bowler or wicket-keeper should miss the ball, or the ball go wide of him, at least two fieldsmen should be behind him to save "overthrows"; nothing shows want of organisation so much as bad "backing up" —a term, by the way, which is also used when a fieldsman passes the ball on from a throw from the deep-field which is too long for the original fieldsman's powers.

No special directions seem needed for special places in the field; some men will find that their quickness qualifies them for positions near the wicket, others that their powers of throwing and of judging long hits makes them good out-fielders, but for short-slip and cover-slip a few hints may be useful, as, especially to fast bowling, they are the most important men on the side, not excepting the wicket-keeper. From these two, then, especial vigilance is demanded; they must watch the ball—not the batsman, as other fielders should—from the moment the bowler begins to run, stooping down, hands to the front ready for action, in the crouching position of the wicket-keeper. Quickness of hand is more important to them than quickness of foot, and they should be able to catch well with either hand. No place in the field is more delightful or more difficult.

Wicket-Keeping—*The following paper by* M. C. Kemp (*Harrow, Oxford and Kent*) *well sums up the duties of this most important post, and should be carefully studied by those who wish to qualify for the arduous and thankless task.*

The Wicket-Keeper—No post, except the bowler's, is more important and more responsible than the wicket-keeper's, and by the end of the season he will generally have dismissed more of his opponents than any other two fieldsmen, with the possible exception of short-slip. To a keen and competent cricketer the charms of the position are many: the wicket-keeper is incessantly on the alert, he enjoys the finest view of the game, he can appreciate better than any one else the delicacies of the bowler's and batsman's art, and he can tell, as no one else can, whether the fieldsmen are in their right places. Hence it is the ideal place for the captain, and even if the two offices cannot be combined, the wise captain will generally consult his wicket-keeper as to any changes of bowling and the progress of the game generally. A wicket-keeper must be prepared to take some painful knocks; balls are hard and hands are soft. It is most difficult to judge the exact course of the ball, especially if it be deflected; a blow on the shin, rib, knee, or top of the thumb is both painful and disconcerting; batsmen do not always get out of the way of a rising ball in time to let the wicket-keeper do the same, and fieldsmen often throw the ball in most erratically. Still, as every team must have a wicket-keeper, and no cricketer must shirk a few hard knocks, every aspirant should try whether he possesses the needful quickness and accuracy of hand and eye.

The wicket-keeper's first duty is to get the batsman out, his second—subsidiary to the first, but quite important—to save runs in the shape of byes. Except when the bowling is remarkably fast, the skilful wicket-keeper may attain both ends by standing close up to the stumps, but to very fast bowling it is generally considered

Fig. 14.

advisable to stand about ten yards behind the the wicket, sacrificing the chance—which seldom occurs with really fast bowling—of stumping a man. When standing up, he should be so close to the wicket that he can easily touch it with his hands; his body should be mainly on the off-side, where most of the chances come, but his left leg should be just outside the leg stump, so as to stop any ball which may just miss it. If the ball is seen to be coming outside the batsman's legs, he must jump across like lightning, knees together, and hands at the height at which the ball may be estimated to come, as the batsman's body prevents a consecutive view of it. Some wicket-keepers stand entirely on the off-side, when they can implicitly trust the bowler's accuracy. The body must be bent—the wicket-keeper must stoop to conquer—till the eyes are a little higher than the wicket. The hands should be spread out, with the palms

forward and well pressed back, so that the finger tips may be spared injury as far as possible. When the batsman plays forward there is always a chance that he will lift his right toe, if only for an instant, hence the wicket-keeper, so as to lose no time, must take the ball directly it passes the wicket and bring it like lightning up to the bails, or the precious moment may be lost. The bails should not be knocked off unnecessarily, but it is better to do so too often than too seldom. If the batsman touches the ball and also leaves his ground, the wicket-keeper must not neglect to break the wicket even though he has caught the ball, as the umpire may fail to hear or see the catch, and in that case "the second string to the bow" is invaluable. There is no chance of a "stump-out" if the batsman plays back [*see* BACK-PLAY, p. 221], hence the wicket-keeper will then be wise to take the ball well behind the wicket, which will give him a better chance of following its course and of saving his hands. He must learn to stand perfectly firm, never flinching except when a ball rises suddenly. When learning, a long-stop gives confidence, but he should be gradually dispensed with; leg-balls may be left severely alone by the beginner. If the hands get badly bruised, they should be rested at once, and above all things, after a long innings, they should be rubbed, while still warm, with St. Jacob's Oil or Elliman's Embrocation, which will prevent any bruises or soreness from becoming permanent. Appeals to the umpire should be made as seldom as possible, but then quickly and confidently, and only when the wicket-keeper is sure, or nearly sure, of the answer "Out!" The left hand should be well practised in catching and "grabbing" at balls, for which purpose Fives is an admirable exercise. When the ball is thrown in from the field the wicket-keeper should always stand so that the wicket is between him and the thrower, and the ball, as in stumping, should be taken, unless it is coming very slowly, *after* it has passed the wicket. Chances come so thickly to the wicket-keeper that the best men miss many, hence occasional failure must not produce discouragement, for coolness in spite of mistakes often enables a man to retrieve his blunders. If two men are running for a catch, the wicket-keeper should call out loudly, distinctly, and promptly, the name—nothing more—of the man who has, in his opinion, the best chance of securing it. Most wicket-keepers nowadays make their gloves sticky by artificial means, the better to retain the ball, to such an extent that a man has been seen to lift a ball off the ground without grasping it. Whether this is right or not, from a moral point of view, is a moot question, but it is generally done and no objections are raised. If, however, the gloves are *too* sticky the bowler will complain when he finds that the ball will not readily leave his hand. The practice is useful to wicket-keeping, but does not conduce to good bowling.

Too much stress cannot be laid on the necessity of taking care of the hands. No man who has to keep wicket in first-class cricket should risk his fingers by taking the same place in other matches. India-rubber finger-stalls worn inside the gloves are a great protection, both from bruise and dislocation, but some men hold that they interfere too much with the freedom of the fingers' action. Good pads are essential, but, if a bad bruise occurs on the leg, a batting-glove, inside the pad, is a very useful protection; and another useful guard is to have a thick piece of padding sown on to the inside of the pad, so as to protect the inside of the right knee—a most vulnerable point. Yet one more hint: if the ball is so badly thrown up—as it often will be—that it will reach the wicket-keeper on the "half-volley," he will find it almost impossible, or certainly very difficult, to handle it; as a last resort, he should let it hit his legs (knees and heels together), and so place himself that it may bound from his pads to the wicket. Finally, the wicket-keeper should always return the ball to the bowler as a gentle catch or long-hop; the bowler is bearing the burden and heat of the day, and it is sheer cruelty and bad policy to increase his labours by a crooked return, or a half-volley.

If the wicket-keeper or bowler has to run after the ball, the nearest fieldsman should at once hurry to the deserted wicket, in case there may be a chance of running a man out.

M. C. KEMP.

The Captain—As the captain who is chosen to manage a side in the field has, almost invariably, a voice in its selection, the two questions—management and selection—are here included under the same head.

The two best bowlers available should be chosen first, as attack is more important than defence. Next comes the best wicket-keeper who can be secured, and after them the three or four best batsmen—always supposing that they are good "fields"; for it must not be forgotten that a fine field always saves runs, though a fine batsman frequently fails to get them. This leaves five places to be filled up; two, at least, must be *good* change bowlers, who can also bat fairly well, and the last three vacancies may be given to men who can bat well and field well, regardless of their bowling powers; though probably one at least can "go on" at a pinch. When there is any doubt, a sure fieldsman who can bat fairly well should be selected over the head of a better batsman who is known to field badly, but it is no good sacrificing batting to moderate bowling. "If you can't win with four good bowlers, you can't win at all," is a recognised axiom. A lob-bowler is

a useful addition to a side. So much for the composition of the team, which contains two bowlers, selected for their bowling only, and a wicket-keeper chosen merely to fill that post; two men who bat fairly and bowl fairly, the rest being all respectable fieldsmen, and some of them brilliant batsmen. With a side so composed the captain need not be afraid "to speak with his enemies in the gate."

Some remarks on the captain's duties preliminary to the call of "Play!" will be found on p. 216; but if he wins the toss, he has first to make up his mind whether he will send in his own side or his adversaries. The latter policy is rarely good. To take first innings implies that the ingoing side has the wicket when fresh, and that the other will have to play the fourth innings when the turf will be more or less cut up—a serious disavantage. To send the other side to the wickets implies that the captain is sure—nothing short of "sure"—that the ground will improve with time, and during the continuance of the game. The man who can feel thus positive as to his weather-wisdom has not yet been born; hence the writer's advice, notwithstanding what others may say, is, "Go in *always*, if you are lucky enough to win the toss." Critics may be wise after the event, but that means nothing. Special circumstances, too, may alter cases, but there are few occasions when it can possibly be a foreseen disadvantage to bat first.

In making out the "order of going in," the best batsmen should be sent in early, but a young player, a "colt," who is being played as a batsman, may well be sent in first, before the bowlers have got into their swing, as a good beginning will banish all nervousness. If two men are of equal merit, the one who can bowl should go in before the other, so as to give him a chance of a rest if he makes a long innings. The last few men, the "tail," may bat in a descending order of merit. The captain should always be on the spot, in case any point of strategy requires his presence, especially if his side goes in late in the day, and a wicket falls just before time, in which case it may be advisable to send in an inferior batsman in the waning light, so as to avoid, if possible, the loss of a more valuable wicket. But on this point experience—and all captains should be experienced—is the best guide. A left-hander may well be sent in early, as he is likely to destroy the equanimity of the field if he makes a long stay. Slow scorers, again, may be sent in before hard-hitters, if time is of no importance, but if the "game has to be forced," the hitters must have precedence, especially if rain has fallen on a hard wicket, and is followed by bright sunshine. Such a condition of things always implies a "caked" wicket in the early future, and the hitters must make their runs while the sun shines, but before it has ruined the wicket. If time is precious, a left-hander should not be sent in, as the incessant changes in the field waste time. The captain should see that a heavy roller is not used after rain, if its weight is likely to bring the water to the surface.

The captain's task is more arduous, and more severely criticised, when his side is fielding. He must of course assign to his men the positions which are known to suit them best, though these may be varied as the game proceeds. He should be careful to see that no man has an unnecessarily long journey between the overs, and that his bowlers are not required to run about in the field after their spell of bowling. A bowler must be spared all unnecessary exertion. All changes in the position of the fieldsmen should be made by the captain, but only after consultation with the bowler, or at his suggestion, if approved; but the captain of an eleven should be, like the captain of a man-of-war, an absolute autocrat. At the same time, he should so far veil his despotism as to consult with the bowler occasionally, and with the wicket-keeper always—or nearly always—as to any change of bowling which events have not rendered obvious. He must watch the score, and remember that it is generally better policy to change his bowling too often than too seldom, and that when one of the original, and presumably best bowlers has been removed, it is better to reinstate him as soon as possible, than to try another bowler, who is inferior. If the principle may be worked into a maxim, that maxim would run, "Trust to your best bowlers to get the wickets, and regard the others as mere reliefs"; at the same time, the willing horse must not be worked to death, and frequent but short rests will help the captain to make the most of his attack.

When two batsmen are well set, the captain's power of resource is tested to its uttermost; if a separation seems hopeless, he should try every bowler, however inferior, in turn, hoping that a stroke of luck may break up the partnership. This done, the best bowlers should be called to the attack once more, as if the inferior, though successful, bowler is allowed to continue, the newcomer will probably "get his eye in," and defy the most dangerous assault. A bowler sometimes sends down a succession of "maidens." Unless the batsman's defence is seriously taxed, this bowler should be changed; he is only helping the batsman to get set; but on this point the wicket-keeper should always be consulted, as he can see better than any one else if the batsman is really at his ease or not.

The captain should field near the wicket—if he can keep wicket, so much the better for his side—and he must set his men an example of hard work and cool temper: for the captain who shows signs of ill-humour, however slight, at any blunder on the part of his men, will never pull them together in the hour of distress. A

word of sympathy with the man who has just missed a catch will restore the erring one's peace of mind, which a hasty ejaculation would have banished for the rest of the innings. To be a disciplinarian is one thing, to be a martinet is another; and this the captain need seldom be.

It would be easy to write for ever on the various qualifications required in a captain, and the various contingencies which may call for special qualities. The hints here given must be sufficient, with the *addendum* that only a cricketer of some experience should accept the post, unless it is forced upon him, and that only experience in the field and observation from the pavilion can teach him his multifarious duties.

The Umpires—The ideal umpire must be a man of wide experience, quick of eye, and prompt in decision. Needless to say, he must know the laws of the game thoroughly. The best umpires are generally first-class professionals, who have retired from active service and are known to be men of the highest integrity.

Umpires have no light task: they are the first to enter the field and the last to leave it; their attention is strained throughout to the uttermost; they get practically no rest, as probably one-half of the players do, except the interval for luncheon; and the points on which an instantaneous decision is necessary are sometimes most delicate, and a moment's inattention, resulting in a wrong decision, may have a very serious effect on the match. Nothing, then, is so wrong—to the writer's way of thinking, so suicidal—as an incessant series of appeals, or, worse still, an expression of ill-temper, when batsman or fieldsman is dissatisfied with the decision of a hard-worked official, who is presumably doing his very best to be impartial and accurate. Only those who have filled the post, however unimportant the match, can fully sympathise with its difficulties.

For the umpires' duties Laws 43–53 should be studied, and the "Instructions to Umpires," issued by the M.C.C., who also appoint the umpires for each match in the County Championship, each county nominating an umpire, who, however, is not allowed to officiate in a match in which that county takes part.

Five minutes before play begins the umpires go out to the wickets, taking the ball and bails with them. Their positions are described on p. 216; their first duty will be to give the batsman "guard" or "block" (*see* p. 217), standing for the purpose wherever the latter wishes. As the bowler delivers the ball, the umpire must stand so that he can see clearly down the line of the wickets, and watch the bowler's foot and hand (as best he can), in case he delivers a "no-ball." All doubtful catches will be referred to him; if he is unable to give a decision he must appeal to his colleague; if neither can decide, "the existing state of things continues," *i.e.*, the striker remains at the wicket. If the umpire is not *perfectly sure* that the batsman is out, he must give the verdict in his favour. He will be most frequently appealed to for a catch by the wicket-keeper, often the slightest touch on the edge of the bat, and in this case most good umpires agree that the eye must be convinced as well as the ear, for there are many things which may cause a "click" which *sounds* like the contact of bat and ball.

All cases of "leg-before," the hardest of all, come before the bowler's umpire, who must be absolutely convinced that Law 24 has been infringed before ordering the batsman out. It should be remembered that if the ball hit the leg first and the bat afterwards, the striker is out, provided that the ball has fulfilled the conditions required by Law 24. In deciding the question of "the fitness of the ground" (Law 43), the turf should be in a condition fair both to batsman and bowler, and the best umpires consider the ground fit for play after rain if the pressure of the foot brings no water to the surface of the wicket, and if the bowlers can get a footing.

The umpire at the striker's end has practically to decide only on a "stump-out," or "run-out," but as his colleague may appeal to him at any moment, he must never relax his vigilance.

Umpires have a code of signals by which they communicate with the scorers. Thus, a bye is signalled by holding up the hand; a leg-bye by touching or lifting the leg; a boundary-hit by waving one arm horizontally; and a wide by waving both. A no-ball and a short run, being loudly called, require no signal. The scorer answers and acknowledges signals by holding up his hand.

At every cessation of play the umpires should bring the bails away with them; at the end of the match, or of the day's play, they bring the stumps also; hence "to draw the stumps" means "to stop play for the day."

They should be careful to call wides and no-balls clearly and promptly; when a wide is only signalled the non-striker does not know whether it is a wide or not, and may consequently be at a loss whether to run a bye or not.

The Scorers—Each side usually provides its own scorer, and the two can thus keep a mutual check on each other. Strict attention to the game and to the umpires' signals, which should be promptly answered, is necessary, and care must be taken, when the full score is not shown on the telegraph, that each successive "ten" is promptly exhibited. The method of keeping the "analysis of the bowling" is perfectly simple, and a properly-printed score-sheet really explains itself. An imaginary extract is, however, given here, as a matter of completeness. When only one run is required to finish the game, the scorers are required by tradition to stand up.

Match played at.....on.....
between... .....and..... .

Batsman's name.	Runs as scored.	How out.	Bowler's name.	Total.
Jones...	1 1 3 2 4 1 1 4 ...	bowled	Robinson...	17
Smith .	.....	c Thompson	Robinson...	0
Brown .	4 1 4 4 2 3 1 1 1 4	c Johnson ...	Johnson ...	25
Stokes .	1 3	run out	.....	4
Noakes.	1 3 4 4 1	st Thompson.	Johnson....	13
Styles .	1 3 3 2 4 1 1 1 4	not out	.....	20
	Byes, 1 4 4 ; leg-byes, 1 2 1 1 3 ; wides, 1	no-balls, 1 ;		19
	Total.....			

An extract from the bowling analysis might read as follows :—

Robinson	·	·	·	·	×	·	·	4	1		
		w		·		·					
	·	4	·	·	1	1	n	·	1		

In the first over a wicket (w) was secured by the third ball, while the last was hit for four runs. The second was a "maiden," *i.e.*, no runs were scored by the batsman off it. The first ball of the third was wide (×), and the fourth of the fourth a no-ball (n). Only runs from the bat spoil a "maiden," none that are called or signalled, except boundary-hits. The bowler is credited with the wickets of all men whom he bowls out, and all who are caught, stumped, l.b.w., or "hit-wicket" off his bowling. If a batsman hits the ball on to his wicket, or it glances on to it off his leg, he is registered as "bowled," and the bowler gets the credit of the wicket. In the imaginary score-sheet Brown is "caught and bowled" (c. and b.) by Johnson, which is, however, entered in the score as shown.

Australian Cricket.—Between 1862 and 1878 four English elevens visited Australia, but whereas the first three sides only played against odds, with fifteen, eighteen, or twenty-two men to oppose, the team of 1876–77 played three matches on even terms, a win, a draw, and a loss being the result. This fact first opened the eyes of English cricketers to the possibility of international matches, though even in 1878, the date of the first visit of Australian cricketers to these shores, no match was arranged between the colonies and the mother-country ; yet the sensational defeat of a fine M.C.C. team by the visitors gave some clue to their powers. It was in 1880 that the first Australia *versus* England match was played, and since that time the match has been a regular fixture. In 1893 two such "test-matches" were played, and in 1896 three. It is not surprising that England should have had considerably the "best of the deal," the results being, England twelve, Australia three, four having been drawn. In Australia the balance of success also lies with the old country, though few, if any, of the visiting sides can be said to have been absolutely representative of English cricket, while, from the methods in which such visits are arranged, the Australians have probably a better chance of getting a *nearly* representative side to visit England than England to visit Australia. In all, thirteen English sides have gone to Australia, and nine Australian elevens have come over to England, to the great advantage of both countries and of cricket in general.

To compare the cricket of the two countries would present no easy task, but it may be asserted generally that English batsmen, especially on slow and difficult wickets, are markedly superior to the Australian, that Australian bowling is slightly better, and Australian fielding and throwing distinctly better than the English, the last two items especially emphasising the fine qualities of the English batsmen. Each country has undoubtedly learned something from the other.

The following paper on Australian cricket is from the pen of F. G. J. Ford, *a member of A. E. Stoddart's Eleven, which visited Australia in* 1894–95 :—

Cricket, as played in Australia, differs in a very marked degree from the game as played in England, and from various causes. Possibly the most remarkable feature of Australian cricket is the fact that from her limited number of players she has been able, from time to time, to put an eleven into the field fully capable of holding its own in home and home matches with representative teams of England ; and such is her position at the present time. In spite of this, it seems very doubtful whether her second eleven would make anything like such a favourable comparison with the second eleven of England. But she is certainly stronger in this respect than she was ten years ago ; for, particularly in the last few years, there has been a strong advance made in every colony, as is shown by the great increase of clubs and players, as well as by a remarkable improvement in the play, both "up-country" and in the big towns. It is true, however, that some five or six years ago there was a strange decline in the interest taken in the game. The old enthusiasm seemed to be wanting, and even the inter-colonial matches failed to arouse the keenness formerly associated with them. Possibly the non-success of the teams sent home just at that time had served to damp men's interest ; possibly the slow style of play then coming into vogue wearied the public taste. Then, somewhat indirectly, the visit of Lord Sheffield's team in 1892 revived the cricket interest that had so long been latent. A sudden change was brought about by the victory of the Australians in the rubber of three representative matches that was played with that combination. One gratifying result of the revived interest is the appearance of a colonial team from Queensland, which, though scarcely

a match at the present time for any of the other colonies, yet commands sufficient interest in the game to enable it to take its place with the others. A very strong evidence of this revival is to be found in the extraordinary excitement caused by the visit of Stoddart's team in 1895 and the recent return visit of the Australians to England. It is only natural that, in view of their paucity of numbers, the Australian teams should not have always maintained their highest standard, but however the strength may have varied, there has never been anything commonplace about Australian cricket. Individuals among her players have always stood out prominently in one branch of the game or another, and there are Australian names which, with one great exception, take no second place even among the greatest.

How does Australia train her men? There are no cricket nurseries such as we have in our public schools, where colts can take advantage of the advice of experienced cricketers, but the facilities for practice are numerous. Most of the cricket in Australia is played upon cement laid upon a brick foundation, with matting stretched over the whole, proper turf being a great rarity. Thus, in the rough land which lies outside the Sydney cricket-ground, there are several cement wickets laid down by the local authorities, where any one may practise, and this system has been adopted in other quarters to encourage men to learn to play. These cement and matting wickets, though apt to be fiery, are always true and fast, and the bowler can generally get a little work on the ball; also, when they begin to wear out, they can be repaired at a trifling cost; while, further, as they are quite independent of the weather, neither side can plead a "sticky wicket" as the cause of defeat. Again, wherever an open space can be found, a ground can be made fit to play on in a very short time; for a good wicket—which is mainly important—is a great compensation for rough out-fielding. Some grounds, such as the ground at Broken Hill, cannot boast a single blade of grass, but the brown undulating soil is rolled tolerably smooth, and a good cement wicket adorns the middle. In almost every up-country town a ground of this sort, with perhaps rough grass to field on, is to be found. The Adelaide Oval provides perfect wickets, but for fielding is open to improvement. The Melbourne and Sydney Clubs possess as fine turf grounds as exist anywhere, smooth as a lawn all over, and circular in shape. A white wooden paling or railing, three or four feet high, runs round them, and the crowd is never allowed to invade the sacred precinct. The wickets on these grounds are indeed the batsman's paradise—in fine weather. A peculiar black soil is used where the wickets are laid, which becomes as hard as adamant—so hard that even the making of a block-hole is often out of the question—and as true as a billiard-table. There are a few other turf grounds to be found; but the majority of cricketers have to learn to play on matting and receive their polishing at one of the great cricket centres. For the most part they learn to play by the light of nature, with the advantage of a very long summer and a possibility of practising nearly all the year round. To the former is probably due a certain absence of that finished style which we are accustomed to associate with cricketers who have been studiously coached in their youth—not that their skill in any way suffers thereby, but rather is the individuality disposed to be more strongly marked.

One great advantage that the Australians possess is that with their long summer they are able to play all their matches out to a finish; drawn games are almost unknown. It is the custom, too, at the Melbourne, Sydney, and Adelaide grounds to cover the wicket at night-time with a tarpaulin, so that neither heavy dews nor rain by night may unfairly handicap the batting side during the first hour's play in the morning. Every precaution then is taken that a match may be fought out on a hard wicket. And we may see in this the reason why the Australians enjoy a reputation for appearing at their worst on the slow, sticky wickets that so frequently occur in England. Still, on the whole it is a distinct advantage for the youth of Australia that they should receive the beginning of their cricket education on true and fast wickets; it is in this that they have the best chance of learning to play with a free, upright style and a straight bat, and to overcome the very natural fear of fast bowling. But this is not an unmixed blessing, as, from want of proper practice on wet and difficult wickets, an Australian side is especially liable to collapse if a match has to be played under these conditions. On the other hand, to these hard wickets is due that remarkable accuracy of length which the greatest Australian bowlers have shown us. By bowling constantly on them, her bowlers learnt what the English bowlers learnt from them—that great accuracy of pitch and subtle variations of pace are the deadliest weapons that a bowler can command. It taught them to exercise greater cunning and to acquire the art of making the ball spin and break even on perfect wickets, and this has always been a more prominent feature among Australian than among English bowlers.

There is at the present time, unfortunately, a strongly marked tendency among colonial cricketers of all classes to adopt a slow, "pottering" style of play. No doubt this development has arisen from the fact that, as all matches are played out to a finish and no economy of time is necessary, the batsman is apt to overvalue the cricket adage, "If you only

stay at the wickets, the runs are sure to come." It is an excellent thing for every team to possess one or two players who can be relied upon never to take a liberty; no less is it ruinous to the interests of the team that *every* member should adopt these tactics, which have for the time being almost ruined one English county team, and if encouraged further may imperil Australia's reputation for producing brilliant cricketers, and sadly spoil her "winning brackets" in this country.

There is another external influence acting on the game in Australia which has never failed to make itself felt by the English teams when visiting the country—and that is the light. Visiting teams have invariably had to pay the penalty, particularly in the earlier matches of the tour, for being unable to judge the ball accurately in its flight through the air; and it is no uncommon thing for a deep field, expecting to bring off his catch, to find the ball pitch ten yards over his head, to the huge delight of the crowd. The tropical heat of mid-summer also proves a great trial to Englishmen, and so far affects the Australians themselves that the necessity of an interval for tea is recognised. On the other hand, when the Australians visit England, they in their turn suffer from the cold winds of our early summer, and their play must be affected thereby.

Another fact that may be noticed by way of comparison is that while one or two members of an English eleven will invariably be found to *jerk* the ball back to the wickets, *all* the Australians can throw, and for the most part with greater force and accuracy than our own players. Doubtless our climatic conditions are accountable for the number of strained arms that exist, but, generally speaking, the Australians have the reputation for being better in the field than we are; and, as it is true that they learnt the finer arts of batting from watching English cricketers, no less is it true that the Australians first opened our eyes to the value of smart fielding and hard accurate returns.

The minor cricket of Australia has a peculiarity of its own. Its matches, except when arranged to last for one or two days only, are seldom played out on consecutive days, but are carried on from Saturday to Saturday till they are lost or won. Fortunately the long summer allows of these club fixtures being easily finished in this manner, but a difficulty arises therefrom in that the players have to bind themselves from week end to week end, which involves some inconvenience; and many cricketers, being unable to pledge themselves so far in advance, are debarred from this class of cricket in consequence. Time is more precious, and there are fewer idle men in Australia than in England, so that working days cannot be set aside for cricket, except in the case of the most important matches.

Two more points alone require notice. The first is the almost universal fairness of Australian bowlers; their delivery—possibly two exceptions might be made—has always been most strictly orthodox, and "throwing" instead of "bowling" is an unknown, or almost unknown, offence. It would be good for English cricketers if we could say the same of all our bowlers, fast and slow.

Secondly, the question of umpires deserves a word. In the early days of Australian cricket, when professionals did not exist, and amateurs, with little more experience than a general knowledge of the rules, were pressed into the service, the umpiring was undoubtedly very unsatisfactory, both to the cricketers and the spectators; and as, in inter-colonial matches, each colony provided its umpire, and our system of selecting neutrals had not been adopted, disputes, cessations of play, and even miniature riots took place in consequence, while Australian elevens got rather a bad name for cavilling at the umpires' decisions. Happily this is now a thing of the past. Stoddart's men were unanimous in their praise of the fairness, impartiality, and ability of the Australian umpires; and with this brief allusion to what *has been*, the question may be relegated to its grave for ever. The disputes were doubtless due largely to the amount of public betting that took place on the grounds.

F. G. J. Ford.

English Teams in Australia.

The following is a list of the years in which English sides have visited Australia, with the names of the captains:—

1862	Stephenson (H. H.).	1886–87	Shrewsbury (A.).
1864	Parr (G.).	1887–88	G. F. Vernon.
1873–74	W. G. Grace.		,, ,, C. A. Smith (Shrewsbury's team).
1876–77	Lillywhite (James).	1891–92	W. G. Grace (Lord Sheffield's team).
1878–79	Lord Harris.		
1881–82	Shaw (A.).		
1882–83	Hon. Ivo Bligh.		
1884–85	Shaw (A.).	1894–95	A. E. Stoddart.

Australian Teams in England.

1878	D. W. Gregory.	1888	P. S. McDonnell.
1880	W. L. Murdoch.	1890	W. L. Murdoch.
1882	,, ,,	1893	J. McC. Blackham.
1884	,, ,,	1896	G. H. S. Trott.
1886	H. J. H. Scott.		

County Cricket—From very early times, matches between rival counties were common, and attracted much attention and interest, and when in later years it became customary for certain counties, presumably the best, to put a regularly organised team in the field and to play home-and-home matches with others, it also became customary at the end of the year to analyse results, and to pronounce this county or that the champion county of the year. But as there was an absolute lack of system, it was practically the sporting newspapers which decided the championship, each more or less according to its taste, and no real importance was attached

to the title. In 1873 the question of county qualification was raised and settled, and in 1888 a further rule was passed [*see* RULES OF COUNTY CRICKET, p. 214], but no definite "County Classification" was adopted until some years later, when, by tacit consent, certain counties were held to be "first-class," and to be the competitors for the championship, which is now awarded by the M.C.C. under the regulations then adopted. At that date, too, several new counties were admitted to the "sacred pale" of first-class. In 1896 a new system of awarding the championship was arranged experimentally, and it was left to the Marylebone Club to decide from year to year the number of inter-county matches which each county must play, if it wished to qualify for the championship. The whole system may be regarded as "rough and ready," but there is a general "roughness and readiness" about many of the regulations attached to the game which is possibly one of its charms, for, as all cricketers know, a thousand and one problems may be suggested for which the laws do not properly provide, or as to which the dispensers of those laws—the umpires—are not in accord. At the time of writing (1897) county cricket has proved an enormous attraction to the cricket-loving public; it has done much to popularise the game, and, in the absence of a visit from the Australians, ranks far above any other form of first-class cricket, the matches between Oxford and Cambridge, and the Gentlemen and Players not excepted.

In a work of this description it would be impossible to follow in detail the performances of different counties and their "ups and downs." A chart of the last fifty years would be full of interest, were it not for the desultory nature of the engagements before the whole question was formally taken in hand. Whether the scheme, as now arranged, is perfect, remains to be seen: it is certainly superior to the chaotic condition of things which existed till then. The following list of counties, which have been held to be "champions" in different years, can hardly be regarded (in the absence of definite rules, as was for some time the case) as final, but for the last ten years it may be considered absolutely correct, and to be founded, for earlier years, on the consensus of public opinion, as the methods of calculation have often differed, and the number of matches played by each county depended on its own sweet will.

1880. Notts.
1881. Lancashire.
1882. Lancashire and Notts, equal.
1883. Notts.
1884. ,,
1885. ,,
1886. ,,
1887. Surrey.
1888. ,,
1889. Surrey, Notts, and Lancashire, equal.
1890. Surrey.
1891. ,,
1892. ,,
1893. Yorkshire.
1894. Surrey.
1895. ,,
1896. Yorkshire.

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FAMOUS GROUNDS—**Cambridge**—For very many years the University has played its matches on the ground which was opened by F. P. Fenner in 1846, and which was known as "Fenner's," till in 1875 the C.U.C.C. leased the ground and added a handsome pavilion. In 1892 the club acquired the freehold. The match enclosure, about five acres, is covered with such beautiful turf that high scoring is the rule rather than the exception. The full size of the ground, now known as "The Cambridge University Cricket Ground," is about eight acres, and 10,000 persons can witness the game with ease.

Derbyshire has its head-quarters at Derby, a ground of eleven acres, seven of which are reserved for matches and three for practice. The pavilion and grand stand seat about 1,000, and there is every convenience for the public. The turf, though a little coarse, is grown on good clay marl and wears exceedingly well.

Essex has its ground at Leyton, where on a good gravel soil are eleven and a half acres of capital turf, eight and a half acres being reserved for cricket. There is plenty of accommodation for 20,000 persons, apart from the seats in the stands and pavilion.

Gloucestershire—The county ground is at Bristol, and comprises fourteen acres and a half of good sound turf, eight of which are reserved for matches. There is a fairly large pavilion and stand. Two county matches are played annually on the Clifton College and also on the Cheltenham College grounds, the latter fixtures forming the "Cheltenham Week." Both grounds are exceedingly good.

Hampshire plays two matches annually on the "Officers' Recreation Ground, Portsmouth," a ground famous for good wickets and high scoring, but the bulk of the matches take place on the county ground at Southampton, where there is plenty of room for cricket, and on the good, sound turf the average scoring is very high.

Kent distributes its matches among various towns, but the head-quarters of the county are at Canterbury, on the recently acquired St. Lawrence ground, where the famous "week," the progenitor of all similar weeks, opens on the August Bank-holiday. The ground, thirteen acres in area, half of which is devoted to cricket, is well-drained and dries fast; the turf is of the best. The ground can hold 14,000 spectators, including some 2,000 in the pavilion and stands. A "week" is also held at Tonbridge, on the Angel ground, a large and commodious enclosure of excellent turf. The Maidstone ground in Mote Park is somewhat small, and, though the turf is capital, the slope is so marked that the ground is hardly first-rate. County matches are also played occasionally at Beckenham, Blackheath, Catford Bridge, and Gravesend.

Lancashire plays all its matches except two on the famous "Old Trafford Ground," Manchester. The extent of the ground is ten acres, of the match enclosure six; stands, pavilion, and other buildings occupy the remainder. The pavilion is a reduced fac-simile of that at "Lords." The turf is admirable, though often very slow, owing to the rainy climate. One of the international matches is always played at Old Trafford. Two county matches are played on the Aigburth Ground, Liverpool, where there is a splendid pavilion and every facility for cricket. About eight acres out of eleven are set apart for matches.

Leicestershire—The county ground is in the Aylestone Road, and all county matches are played there. The ground, eleven acres in extent, is covered with good turf; and half of it forms the match portion. The pavilion and stand seat 1,500 persons, and there is seating round the ground for 1,500 more.

Lord's is the head-quarters of English cricket, and comprises about fourteen acres, with a match enclosure of six acres. There are seats for 7,500 spectators round the ground and for about 4,000 more in the stands and pavilion. From the clayey nature of the soil, the ground is as hard as iron after a succession of hot days, but after rain it is probably the most treacherous in England. [*See* LORD'S and M.C.C.]

Middlesex—All the home-matches of this county are played at "Lord's."

Nottinghamshire—The Trent Bridge Ground, Nottingham, is the home of the county's cricket. It is nine acres in size, six acres forming the match portion, and being covered with excellent turf. The new pavilion, built in 1886, holds some 3,000 spectators, and the ground is surrounded with terraces, provided with seats and roofed with canvas, for the convenience of the public.

Oxford—For many years the O.U.C.C. used a ground known as "The Magdalen Ground," and belonging to that college; the present ground was acquired in 1880. The total size of "The Parks" is about ten acres, of the match enclosure five and a half acres; the turf is sound and good under favourable conditions, but is apt to be tricky if the weather is unpropitious. As "The Parks" are public property, no admission fee can be charged, and consequently, when gate-money is required, matches are played elsewhere—on the Christ Church Ground, in the Iffley Road. The Pavilion accommodates about 600 persons.

Somersetshire possesses an excellent county ground at Taunton, with a fine sward of turf, which dries after rain more quickly than any ground in England. It is six and a half acres in size, accommodates 6,000 spectators in "the ring," and 1,000 more in pavilion, grand stand, and ladies' enclosure.

Surrey—In "The Oval," Surrey possesses a ground which in fame stands second only to "Lord's," in excellence second to none. Out of eleven and a half acres eight are devoted to match purposes, and the turf is remarkably fine and good. There are 3,250 members, 1,600 of whom who can find seats, while for the visiting public 3,000 seats are provided in the various stands. The ground belongs to the Duchy of Cornwall and is situated in Kennington.

Sussex—The County Ground is at Hove, Brighton, and is famous as being the easiest ground in England for batsmen. The turf is close and smooth; the ground is level and recovers with marvellous rapidity after rain. The total size is ten acres, six of which form the portion devoted to matches, but so fast is the turf that the six acres seem to shrink into four when the ground is hard. It is the paradise of batsmen and the terror of bowlers. Matches are also played on the good grounds at Eastbourne and Hastings, but the arrangements for the public are necessarily of a temporary character. The "Hastings Week," held in September, is a very popular and flourishing institution.

Warwickshire—The County Ground is in Edgbaston, a suburb of Birmingham. The size of the ground is twelve acres, of the match enclosure five and a half. There is a capital pavilion, with seats for 2,000 members, and for the general public raised accommodation is provided round the ring. The grand stand holds about 600 persons. The turf is close and thick, and the ground admirably level, but, as the ball does not seem to travel very fast, the ground does not lend itself to rapid scoring.

Yorkshire—Bramall Lane is the head-quarters of the Y.C.C.C., the ground being eleven and three-quarter acres in size, and the match enclosure taking up eight of these. The grand stand can seat 3,500 persons, and 30,000 can witness the cricket without inconvenience. Unfortunately the turf of late years has not been in the best condition, but, as special attention has been paid to it recently, it should now revert to its former excellence. One drawback to the ground is the bad light which prevails, when the wind blows from certain quarters. County matches are also played at Leeds, Bradford, Scarborough, Dewsbury, Harrogate, and Huddersfield. The "Scarborough Week," held in September, is a recognised institution, but is not an occasion for genuine inter-county cricket. The Headingley ground at Leeds provides about eight acres of playing surface, with pavilion and stand accommodation for 5,000 people, while fully 30,000 can witness the game in comfort, the turf being of the best quality. The playing area at Bradford is about six acres, the whole ground covering ten. The turf is second to none, the ground is most accessible, and some 30,000 people can watch the game simultaneously. The pavilion is spacious and contains all necessary comforts.

W. J. Ford.

Records.

In January, 1897, the following were the "record" performances—

Highest total for one innings in a first-class match—
887 by Yorkshire *v.* Warwickshire (1896). In this match four men scored over 100 runs (one of them over 200); also a record for first-class cricket.

Highest individual score in a first-class match—
424, made in 1895 by A. C. Maclaren for Lancashire *v.* Somersetshire.

Highest aggregate in a first-class match—
1,514, made at Sydney in 1894, in a match between All Australia and A. E. Stoddart's English Eleven. This match lasted into the sixth day.

Highest aggregate in a three-days' match—
1,410, made in 1895 in a match between Sussex and Oxford University.

Highest individual score ever made—
485, by A. E. Stoddart (1886) for the Hampstead Club *v.* The Stoics.

Highest score ever made in a single innings—
922, scored by Carlton C.C. against Melbourne University in 1896. One higher total is recorded, but not properly authenticated.

Two hundreds in the same match have, in first-class cricket, been scored by—
W. G. Grace, in 1868, for South *v.* North of the Thames, 130 and 102 not out.
" " in 1887, for Gloucestershire *v.* Kent, 101 and 103 not out.
" " in 1888, for Gloucestershire *v.* Yorkshire, 148 and 153.
A. E. Stoddart, in 1893, for Middlesex *v.* Notts, 195 not out, and 124.
G. Brann, in 1892, for Sussex *v.* Kent, 105 and 101.
Storer (W.), in 1896, for Derbyshire *v.* Yorkshire, 100 and 100 not out.
K. S. Ranjitsinhji, in 1896, for Sussex *v.* Yorkshire, 100 and 125 not out, both these scores being made on the same day, a feat without precedent.

The largest number of runs produced by the partnership of two men in a first-class match is—
398, made by Gunn and Shrewsbury for Notts *v.* Sussex, in 1890.

The largest number of runs produced by the partnership of two men in any match is—
623, made by Captain Oates and Private Fitzgerald, in 1895, for Royal Munster Fusiliers *v.* Army Service Corps.

The longest stand made, in first-class cricket, for the first wicket is—
346, made by H. T. Hewett and L. C. H. Palairet for Somersetshire *v.* Yorkshire in 1892.

The longest stand made, in first-class cricket, for the last wicket is—
173, made by Briggs and Pilling, for Lancashire *v.* Surrey, in 1885.

The largest number of hundreds made in first-class matches is (1896) *one hundred and eleven*, made by W. G. Grace, the first being 224 not out, made in 1866 for England *v.* Surrey, and the last, 301, made in 1896, for Gloucestershire *v.* Sussex.

The furthest distance, properly authenticated, to which the ball has been hit before reaching the ground is 168 yards 2 feet. This was done at Brighton by C. I. Thornton.

Colours.

Cambridge University—Ribbon: light blue, on white straw. Cap: light blue. Blazer: ditto.

Derbyshire—Cap: blue cloth, embroidered with rose and crown in gold, within a shield, and words

Derbyshire County Cricket Club. Blazer: chocolate, pale blue and yellow.

Essex—Cap: dark blue, embroidered in red with shield, three seaxes, one over other. Blazer: ditto, embroidered over pocket.

Gloucestershire—Cap: dark blue, embroidered in buff, with "G" within a circle.

Hampshire—Cap: dark blue flannel, with Hampshire rose and crown.

Kent—Cap: dark blue, Kent horse embroidered in silver.

Lancashire—Cap: dark blue, embroidered with red rose. Blazer: dark blue, red rose on pocket.

Leicestershire—Cap: dark green, narrow red stripe, embroidered with fox. Blazer: dark green, narrow red stripe.

M.C.C.—Ribbon: three equal stripes, vermilion, canary, vermilion. Cap: equal stripes, vermilion and canary. Blazer: ditto.

Middlesex—None.

Nottinghamshire—Cap: Lincoln green, embroidered N.C.C.C.

Oxford University—Ribbon: dark blue, on black and white straw. Cap: ditto, embroidered O.U.C.C. Blazer: ditto, O.U.C.C. on pocket.

Somersetshire—Cap: blue, embroidered with white griffin.

Surrey—Cap: chocolate, embroidered S.C.C. For players in twelve or more matches, cap has two white stripes.

Sussex—Cap: dark blue, embroidered with county arms. Blazer: arms on pocket.

Warwickshire—Cap: navy blue, embroidered white with bear and ragged staff.

Yorkshire—Cap: medium blue, embroidered with white rose. Blazer: rose on pocket.

Glossary of Terms.

Analysis (Bowling)—The record of a bowler's performance during a game (*see* p. 240).

Average (Batting)—The record of a batsman's performances during the season. Calculated by dividing the total number of runs by the number of completed innings; in the case of "not out" the runs are reckoned, but the innings is not, *e.g.*,

	Innings.	Times not out.	Total runs.	Average.
Ranjitsinhji	55	7	2780	57·91

Here the total of 2,780 is divided by 48, *i.e.*, 55 minus 7.

Average (Bowling)—The record of a bowler's performances during the season. Calculated by dividing the number of runs scored off his bowling by the number of wickets captured, *e.g.*,

	Overs.	Maidens.	Runs.	Wickets.	Average.
Hearne, J. T.	2,003	818	3,670	257	14·28

"Maidens" do not affect the average.

Back-play—Playing the ball by drawing the bat backwards.

Back-stop = Long-stop (*q.v.*).

Bails—[*See* Wickets.].

Bailer—A ball which removes one or both bails without disturbing the stumps.

Ball—(i.) [*See* Law 4]. It consists of a leather casing, tightly stretched over a foundation of cork, &c.

(ii.) The bowler is said to bowl "an easy ball" or "a difficult ball" in the abstract, without regard to the material ball. The bowling of the ball is also called "a ball."

Bat—The implement used by the batsmen. The blade is made of willow, and the handle of cane or a combination of elastic substances.

Batsman—The man who uses the bat.

Block—(i.) A term sometimes applied to the "popping-crease" (*q.v.*).

(ii.) [*See* Guard].

(iii.) To play a ball without attempting to score from it.

Boundary—The limits of the match-inclosure.

Boundary-hit—A hit to the boundary (*see* p. 216).

Bowled—If the ball, bowled by the bowler, strikes the wicket, the batsman is bowled, and the wicket is also said to be bowled.

Bowling-crease—[*See* Law 7].

Break—A change of direction taken by the ball after touching the ground.

Break-back—A ball which, as delivered by a right-handed bowler, twists from "off" to "leg." With a left-handed bowler the ball breaks from "leg" to "off."

Bump-ball—A ball which after being struck by the bat strikes the ground before it reaches a fieldsman.

Bye—A run made when the ball has not touched the bat or person of the batsman.

C. and B.—Caught and bowled, (*q.v.*).

Call—To shout to the other batsman to run.

Captain—The manager of an eleven during a match.

Carry bat—To be "not out" at the cessation of play.

Catch—(i) To hold the ball, when hit, before it touches the ground.

(ii.) The holding of the ball, so struck.

(iii.) A man is described as a good or bad "catch" who generally holds or fails to hold such a ball.

Caught and Bowled—Caught by the bowler who delivered the ball.

Century—An innings of 100 or more runs.

Century (Double)—The making of two "centuries" in the same match.

Chance—An opportunity given by the batsman to the fieldsman to get him out.

Change-bowler—A bowler who is only invited to bowl when presumably better men have failed.

Change ends—To bowl from one wicket, having previously bowled from the other. [*See* Law 14.]

Clean bowled—To be bowled by a ball which hits the wickets without previously touching the bat or person.

Closure—Declaring an innings at an end. [*See* Law 54].

Colts—Young and untried cricketers.

Colts-match—A match in which one at least of the sides is composed of young and untried cricketers.

Country—To field or be caught in "the country" is to field or be caught at either "long-on" or "long-off."

Cover-point—A fieldsman on the off-side, somewhat in front of the batsman.

Cut—(i.) A stroke on the off-side made chiefly with the wrists (*see* p. 223).

(ii.) An adept at this stroke is called "a good cut."

(iii.) To strike the ball as described.

Cut-over—To be struck by the ball in the groin.

Cut up (the wicket)—To spoil the turf where the ball is likely to pitch, by running over it.

Daisy-cutter—The same as "sneak" or "grub." A ball pitched close to the bowler's foot, which runs along the ground without bounding.

Dead—The ball is "dead" when it is out of play. [*See* Laws 13, 34, 35, 41, 50.]

Declare—To close an innings. [*See* Law 54.]

Delivery—(i.) The method and action of the bowler.

(ii.) Synonymous with "Ball (ii.)" (*q.v.*).

Double wicket—The game as usually played.

Draw—(i.) To remove the stumps.

(ii.) To leave the game undecided.

(iii.) An undecided, or "drawn" game.

(iv.) An extinct stroke on the leg-side (*see* p. 224).

Drive—(i.) A hard hit in front of the batsman (*see* p. 222).

(ii.) To make such a hit.

(iii.) A bat "drives" when the ball flies easily off its face, without jarring the hands.

Ducks-egg—An individual score of 0.

Extras—Any runs not made from the bat.

Field—(i.) The match-inclosure.

(ii.) The fieldsmen, collectively or individually.

(iii.) To act as a fieldsman.

First-class Cricket—Cricket played between two sides, *both* of first-class rank as decided by the M.C.C.

It comprises the games between the selected Counties, the Universities, the Australians, and of the M.C.C. with any of the above. Certain other matches (*e.g.*, North *v.* South and Gentlemen *v.* Players) are annually included.

Follow on—A side "follows on" which, under LAW 53, has two innings consecutively.

Forward-play—Advancing the bat and foot to meet the ball (*see* p. 221).

Full-pitch or **Full-toss**—A ball which hits the bat or wicket without touching the ground.

Gardening—Clearing the pitch of stray scraps of grass or earth.

Get up—A ball "gets up" which rises abnormally high from the pitch.

Go with the arm—A ball "goes with the arm" when on touching the ground it goes across the wicket in the same direction as the bowler's arm swings (*see* p. 231).

Ground (i.) The space behind the popping-crease, which is the batsman's "ground."

(ii.) The professionals, collectively, attached to a club, *e.g.*, "Surrey Club and Ground."

Ground man—The man whose duty it is to look after the playing area.

Grub—[*See* DAISY-CUTTER].

Guard—The place where the batsman puts his bat to guard his wicket.

Half-cock stroke—A forward stroke suddenly checked, so that the ball strikes the bat and is not struck by it.

Hands—An old term for "innings."

Hang—A ball "hangs" which rises unexpectedly slowly from the pitch.

Half-volley—A ball which is met by the bat the instant after it leaves the ground.

Hat-trick, Hat—A white hat used to be given to the bowler who got three batsmen out in successive balls, provided that they were bowled, stumped, caught, leg-before, or hit-wicket. A bowler who performs this feat is said to "get a hat," or to "do the hat-trick."

Hook—To hit the ball from the off-side to the on-side in the direction of square-leg.

Innings—The stay of a side or an individual at the wickets.

Late cut—A cut (*q.v.*) which sends the ball considerably behind the wickets.

Leather-hunting—Fielding.

Leg, Leg-side—The side of the wicket on which the batsman stands.

Leg-bail—[*See* WICKETS].

L.B.W.—Leg before wicket (*q.v.*).

Leg before wicket—[*See* LAW 24].

Leg-break.—A twist of the ball from the leg-side to the off-side.

Leg-hit—A hit to the leg-side, either square with the wicket or behind it.

Leg-stump—[*See* WICKETS].

Length—The distance from the batsman at which the bowler pitches the ball.

Life—If a fieldsman misses an opportunity of catching, stumping, or running out the batsman, he is said to give him a "life."

Lobs—Slow under-hand bowling.

Long-hop—[*See* SHORT].

Long-leg—A fieldsman deep on the on-side, behind the batsman.

Long-off—A fieldsman deep on the off-side, in front of the batsman.

Long-on—A fieldsman deep on the on-side, in front of the batsman.

Long-slip—A fieldsman deep on the off-side, behind the batsman.

Long-stop—The fieldsman who stands behind the wicket-keeper to save byes.

Lost ball—A ball hit away which cannot be recovered. [*See* LAW 34.]

Maiden over—An over from which no runs are scored off the bat.

Match—A contest between two sides.

Mid-off—A fieldsman on the off-side, in front of the batsman.

Mid-on—A fieldsman on the on side, in front of the batsman.

Middle—Guard that covers the middle stump.

Middle and leg—Guard that covers the middle and leg stumps.

Mid-wicket—Another name for mid-on or mid-off.

No-ball—A ball improperly bowled. [*See* LAWS 11, 13, 16, 17, 48A and 48B.]

Notches—An old name for runs, which used to be scored by notches cut on a stick.

Not out—One batsman is necessarily "not out" in a double-wicket match. If the match is won by "wickets" [*See* WICKETS], two are "not out."

Off, Off-side—The opposite side to the "leg-side" (*q.v.*).

Off-bail, **Off-stump** [*See* WICKETS].

Off the wicket—A ball not straight for the wickets.

One-leg—Guard that covers the leg-stump only.

Out-cricket—Bowling and fielding as opposed to batting.

Over—A series of five (sometimes six) balls delivered alternately from either end.

Over the wicket—Bowling so that the delivering arm passes over the wicket

Overthrows—Runs scored after the ball has been thrown to the wicket-keeper or bowler but not stopped.

Pitch (i.)—The ground between the wickets.

(ii.) Synonymous with "Length" (*q.v.*).

(iii.) Almost synonymous with "to bowl." To make the ball strike a particular spot.

Place—To hit the ball intentionally out of a fieldsman's reach.

Play on—To hit the ball on to one's wicket.

Players—Professionals as opposed to amateurs.

Point—A fieldsman on the off-side, square with the wickets.

Popping-crease—[*See* LAW 8].

Pull—[*See* HOOK].

Return the ball—(i) To throw it to bowler or wicket-keeper.

(ii.) To hit it back to the bowler, especially used of a c. and b. (*q.v.*).

(iii.) A sharp straight throw is known as a good "return."

Return-crease—[*See* LAW 7].

Rot—The failure of several good batsmen in succession.

Round the wicket—The opposite to "over the wicket" (*q.v.*).

Run out (i) A batsman is "run out" who in trying to score a run or runs, fails to reach the popping-crease before the wicket has been struck. [*See* LAWS 2 and 49.]

(ii.) A hit is "run out" when the batsmen actually run all the runs gained by the stroke, no allowance being made for boundaries or "lost ball."

Score—(i) The record of runs made.

(ii.) The number of runs made by a side or individual.

(iii.) To keep the record of runs.

Scorer—The man who records the runs &c. (*see* p. 239).

Screens—Erections of canvas, or wood, to provide a white background behind the bowler.

Set—A batsman is "set" who has been in so long that the bowling seems easy and familiar.

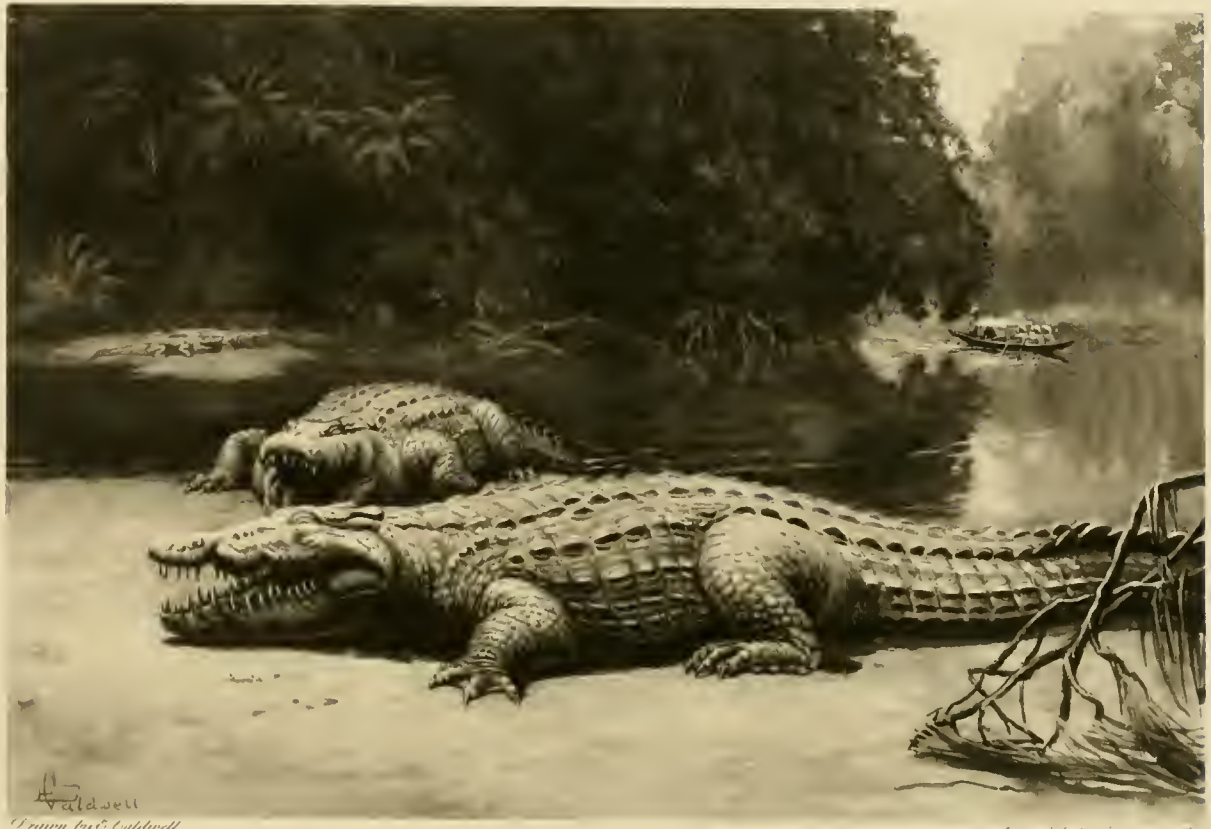
Shooter—A ball which on touching the ground keeps very close to the turf, often with an increase of pace.

Short, Short ball, Short-pitched—A ball which pitches too far from the batsman for a good length.

Short-leg—A fieldsman on the on-side, square with the batsman or behind him but close to him.

Short-slip—A fieldsman behind the batsman, on the off-side, and close to him.

Silly—Applied to point, mid-on and mid-off, when they stand dangerously near to the striker.



Drawn by S. Caldwell

Juan Stadler Engraver &c

Single wicket—Cricket with only one batsman at the wickets. [*See* LAWS OF SINGLE WICKET.]

Skyer—A ball hit very high into the air.

Slog—To hit hard and indiscriminately.

Sneaks—[*See* DAISY-CUTTER].

Snick—To hit the ball with the edge of the bat instead of the face.

Spectacles—Two scores of 0, made in the same match by the same batsman.

Spin—An acceleration of pace acquired by the ball after touching the ground.

Spot—To bowl "on the spot" is to bowl a good "length" (*q.v.*). A bowler is said to have "found a spot," when he continuously pitches the ball on a broken patch of ground, which makes the ball break or rise unnaturally.

Square-leg—A fieldsman on the leg-side, square with the wicket.

Steal runs—To get a run for a hit, when no run seems reasonably possible.

Sticks—A colloquial term for the stumps.

Stump—One of the wickets.

Stump out—To get the batsman out under LAW 23.

Substitute—Under certain conditions [*See* LAWS 37 and 40] a batsman or fieldsman may have a man to represent him.

Swipe—Synonymous with "slog" (*q.v.*).

Tail—The batsmen who go in late, and are generally less skilful than their predecessors.

Talent-money—Money given to a professional as a reward for special success.

Telegraph—An apparatus for showing the state of the score (*see* p. 211).

Third man—A fieldsman on the off-side, behind the batsman.

Thrown out—Synonymous with "run out," provided that the fieldsman hits the wicket with the ball. The term is not used now in the score-sheet.

Tice—[*See* YORKER]. The term is obsolete.

Timing the ball—Hitting it at the precise moment when it can be effectively struck (*see* p. 222).

Trial-ball—An obsolete term. The first ball of an innings, from which the batsman could neither make runs nor be out.

Two-leg—Synonymous with "middle and leg."

Under-hand bowling—Bowling with the hand close to the body, and not raised level with or over the shoulder.

Wicket—(i.) One of the stumps or uprights.

(ii.) The ground between the stumps.

(iii.) The batsman is sometimes, by inference, described as a wicket, *e.g.*, "two wickets are down" means "two batsmen are out."

Wicket-keeper—The fieldsman immediately behind the wickets.

Wickets—(i.) The three uprights and the two bails which are laid on the grooves are collectively called the wickets or wicket. The stumps are known as the off, middle and leg stumps; the bails as the off and leg bails. [*See* LAW 6.]

(ii.) A side is said to win by—say—four wickets when the number of runs necessary to win the match have been got, and only six batsmen are out.

Wide—A ball so crooked that the batsman cannot reach it. [*See* LAWS 12 and 16.]

Willow—A colloquial name for a bat.

Win in an innings—To make more runs in one innings than the other side makes in two.

Work on the ball—Identical with break.

Yorker—A ball which pitches far up; roughly speaking, between the bowling and popping creases.

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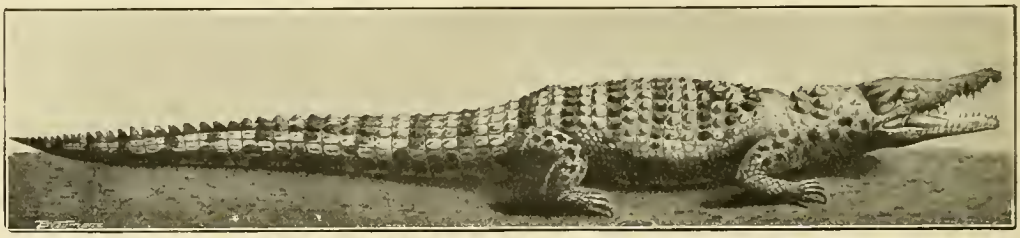
CROCODILE SHOOTING.—**Crocodiles**, of which there are a dozen species, are found in Africa, Southern Asia, North Australia, and tropical America. The chief difference between Alligators and Crocodiles is that in the former the fourth tooth in the lower jaw is received into a *sulcus* or *pit* in the upper jaw, and is invisible when the head is looked at from above, whilst in the Crocodiles the corresponding tooth is received into a *notch* in the upper jaw and can be seen from above. There are other differences, but they are of comparatively slight importance. There are only three Crocodiles about which sportsmen are likely to be interested. First, the **Gavial** (*Gavialis gangeticus*), which has a beak-like snout, and is found in the Ganges, Bramapootra and their

larger affluents, the Mahanudi in Orissa, and the Koladyni River in Arrakan. It is a purely fish-eating species. Secondly, the **Mugger** or **Marsh Crocodile** (*Crocodilus palustris*), identical, but for its snout being somewhat shorter, with the African *C. niloticus*. It is found in tanks and rivers all over India and Ceylon and in Madagascar. In India it does not generally attack men, but instances are known there where they have been carried off by it; and in Africa, both on the Nile and the Limpopo (or Crocodile River), they are not only habitually man-eaters, but have been known to attack men on horseback, who have succumbed to the injuries inflicted. *C. palustris* is also a cannibal, and feeds freely on the remains of its companions, as related by Hornaday in his *Two Years in the Jungle*. The third species, the **Estuarine Crocodile** (*C. porosus*) is, as its name implies, chiefly found at the mouths of rivers but has been seen well out at sea. It is *par excellence* the man-eating Crocodile of the East. It is found in the Bengal rivers, sparingly on the West Coast, and curiously enough, not recorded as met with in any part of the Bombay Presidency. It is also found in Ceylon, Burma, and North Australia. It builds a mound of leaves and rushes, the fermentation of which hatches the eggs. It watches this nest, and will attack any one that comes near it. It has also been known to kill its congener *C. palustris*, from which it differs in having a narrower head, and two ridges on the skull converging towards the snout, and, in the adult, four instead of five teeth in the upper jaw, counting from the median line to the notch. This species is probably the largest of the Crocodiles, a specimen in the British Museum being recorded as thirty-three feet in length. The favourite haunts of all Crocodiles are on rocks and spits of sand left by the floods in rivers and tanks, and it is no use looking for them during the monsoon. They frequent the same spots year after year, so that any one living on the bank of a large river is certain, by taking trouble and occasionally anchoring the intestines of a sheep or pig, or tethering a dog close to the water, to get a shot eventually, which should prove fatal. The brain of a Crocodile is very small, but unless the bullet penetrates it, or the neck, where the spine joins the head, so that the animal is paralysed, it will, although mortally wounded, get into the water, and may not be recovered for twelve or even four-and-twenty hours.

The Crocodile of the Nile is now seldom met with in any numbers below the Second Cataract. Owing to the **Crocodile-bird** or **Zic-Zac** (*Hoplopterus spinosus*) giving the alarm, it is most difficult for the sportsman to approach sufficiently near to make sure of getting a deadly shot. On the Indian rivers, however, although an allied bird sometimes picks the teeth of the Crocodile, it rarely deprives the sportsman of a shot.

Method of Approach—The Crocodile, unless molested, is by no means wary, and will allow a near approach. The most satisfactory way is to be paddled in a canoe along the banks, or, if it is determined to be out for the whole day and the river is deep enough, in a boat with an awning over the stern sheets and manned by four men. It is useless to go out too early, as the Crocodile chiefly feeds during the night and only comes out to bask when the sun is pretty high; then they resort to the spits of sand or rocks, or lie on the banks sleeping, often with the jaws wide open, which gives them a curious appearance. On all the Indian rivers, unless the banks are rocky, the vegetation is luxuriant, the screw pine (*Pandanus*), high grass, and creepers with enormous roots abound, and these, with flotsam in the shape of logs of different sizes, make it most difficult to distinguish the quarry in spite of a good pair of binoculars and the sharp eyes of the crew. Slowly drifting down the stream, or carefully paddling up, you may at last see a beast worth shooting, or more probably one of the men will spot him. At a sign the boat is noiselessly rowed until it is opposite the sleeper, when, with luck and good shooting, a single shot secures him. Should, however, the shot not prove instantly fatal, although mortal, a reward to the boatmen will enable you to recover the beast, which has sunk and will not rise to the surface for at least twelve hours.

In estuaries the Crocodiles seldom come out to bask except at half or low tide, so that there is little or no use in going out when the tide is full.



EGYPTIAN CROCODILE. (*C. niloticus.*)

Best Weapon In old days, when Crocodiles were plentiful and unmolested, many a magnificent specimen was secured with a No. 12 smooth-bore, which had the advantage of not being deflected by twigs. On the other hand, it is now universally allowed that fine shooting cannot be made with such a weapon at over thirty yards, and the most conservative of sportsmen have abandoned it. The best weapon would be a double ·450 Express, the bullet having a hollow of a smaller diameter than that used for soft-skinned animals, and a solid base. This would combine the shock caused by the expanding bullet with the required penetration. It must, however, be allowed that the ·303 Express, furnished with an approved expanding bullet, is fast replacing what sportsmen have hitherto considered the perfection of a sporting rifle.

H. R. P. Carter.

[The natives of Ceylon catch Crocodile in the following manner. A piece of wood about an inch in diameter and fourteen in length is sharpened at both ends. A dozen strands of twine are made fast to the centre, their other ends being attached to eight or ten feet of rope with a wooden toggle at the other end. The bait is a dead dog, in the body of which the wooden stake is completely hidden. Several of these lines are set in the tanks infested by these creatures, and the native merely inspects from time to time until one of them disappears. He then follows the beast to some well-known landing-place, and by the aid of its track in the soft earth, finds it eventually caught by the rope and toggle in the dense undergrowth, and despatches it by a blow from an axe. Some more elaborate Crocodile tackle, with triangle hooks, swivel and steel chain, has recently been supplied to a sportsman in South Africa, but the report of its efficiency is not yet to hand.]

ALLIGATOR—The alligator seems so likely to be exterminated for the sake of his skin, that any account of shooting him may become ancient history in the comparatively near future. And save for the fact that the pursuit of the saurian takes one far from the tread of man, it cannot be said that the sportsman will have much to regret when *Alligator mississippiensis* is as rare as the wild camel of Spain or the buffalo. For beyond an ordinary acquaintance with the handling of a rifle, a boat, and the knife, the most enthusiastic alligator hunter cannot claim for his hobby that it exacts much skill, patience, or nerve. As an angler for pike and one who likes the sport, I would say that alligator shooting is a sport of about the same calibre. And more, the alligator himself is by no means dissimilar to *lucius esox*.

The alligator is to be found in many parts of the world. His habits and methods of capture do not appear to vary. The personal experiences with which I shall deal are such as may at present be enjoyed at almost any time of the year in the rivers, creeks, lagoons, and cypress swamps that pour their waters into or are supplied from the Gulf of Mexico, away down by the Ten Thousand Islands.

The equipment for an alligator shooting expedition is not complex. For a land journey one needs a mule wagon, containing a flat-bottomed folding-boat—any other keelless boat would do—a tent, mosquito nets, cooking utensils, small bore rifle, gun, rods, large gaffs, several bull's-eye lanterns, some skinning knives and skin preservatives, and any luxuries that are easily portable. A day's journey inland from almost any place on that portion of the Gulf Coast described will bring one to a lagoon, or pond, as they are called.

If travelling by boat or canoe, one will speedily be able to tell if one is going in the right direction. Provided an approach is made with comparative silence, the alligator will be found basking in the reeds, or in the mud, or, as often as not, floating with the stream, a portion of his head and his eyes just appearing. At the least sound he disappears in an instant. Like almost every creature of the forest and solitudes, he is quite harmless, unless wounded or aroused. And then beware his sharp, wolf-like fangs and lashing tail.

I can best describe the method of shooting him by an account of a recent expedition of mine. Having spent some days in getting ready our tents, cooking utensils, tinned and other provisions, canoes, rods, cast nets (for live bait), guns, rifles, revolvers, and other impedimenta, we started at dawn from a spot somewhat south of Caximbas Bay, heading direct for the Everglades.

Our little company set out in the chill that precedes the first glimmer of morning. In that region, where either rod or gun may be used every day in the year, we were busy at once. Breakfast had to be caught *en route*, and the simple and clumsy device of a piece of mother-of-pearl attached to an ordinary Jardine snap tackle, and trailed behind our boat in fashion now very properly illegal in the Thames, speedily resulted in what at home would have been considered a fair day's sport—one channel bass, glorious in his golden scales, one sheephead, two bone fish, and many groupers.

At six we came up with our advance guard, cried a halt, lighted our fire, and ate what in those climates should be the best meal of the day; and at night we came to the shores of one of the best alligator lakes the heart of hunter could desire.

We pitched our tent a hundred yards from the shore, and after dinner our guides took the canoes to the lagoon and launched them, and we looked to our lanterns and rifles.

Towards eleven, when the great wilderness

around us echoed with the myriad noises of a tropical night, when the fireflies were at their brightest, and the shooting stars reached right across the sky, it became time to commence our operations. First, we filled our belts with cartridges, then we armed ourselves with Winchesters and a long iron gaff, and finally we fastened round our palmetto hats a leather band which secured our lanterns.

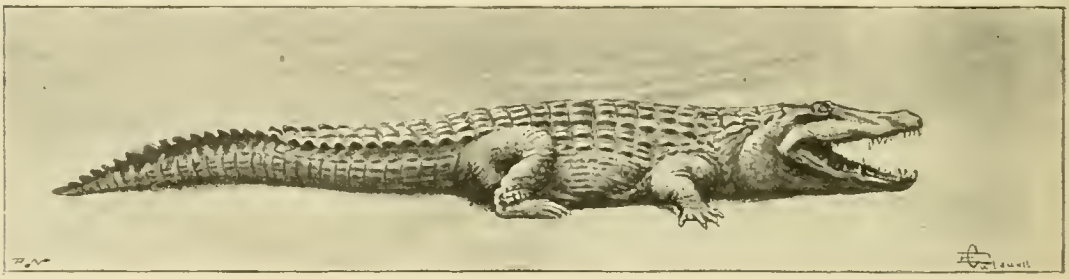
That we should puzzle primitive four-footed creatures and paralyse all manner of fowl was not to be wondered at, for the effect of a number of human beings stalking through such surroundings in the dead of night with great beaming lanterns where their heads ought to be was startling even to the initiated onlooker. It was all new to us then, and we tingled with pleasurable excitement. Twice, as we made our way as noiselessly as possible, we stopped suddenly, involuntarily. Once to make way for something large, heavy, and cumbrous, yet active, that moved from us, and went rustling through the reeds into the distance, till with a splash it tumbled into water: it was an alligator, a big bull alligator. And again, when close by we saw two gleaming opals that came slowly towards us. But crash! on a sudden the deer had recognised its enemy man, and was off and away.

A minute more and we divided and took to the boats. We had already seen the effect of the beam of light on a deer, and we were now to witness something indescribably ghostly. We pushed silently and slowly on to the waters, one party taking the right side of the lake and the other plashing gently in an opposite direction. In the strange silence, broken by the noises of frightened birds and the occasional swirl of some rising fish, moments seemed hours, and at least one of the party thought that the sport would never begin. We had got what I imagined to be a hundred yards or so out into the lagoon when our guide turned slowly inshore, telling me to take up my station in the bow of the canoe. Rifle in hand I knelt. Following the directions of our instructor I flashed my light from side to side. When we got accustomed to the weight of the lantern and the darkness, it became evident that the fringe of the lake was jewelled with small, twinkling, and star-like orbs. "Them's 'gators, sirree."

Presently some of the twinkling lights came nearer, or we travelled nearer to them. "Wait till a pair gets as close as possible and fire between the widest pair you can see."

These, then, were alligators' eyes, and the widest pair would necessarily belong to the biggest Caiman. When the eyes had come quite close, "Crack!" I fired.

There was a splashing all about us, and the eyes disappeared. It was an anxious moment, and, as it proved, a disappointing one. For, though our guide tried to console me by the reflection that I had probably hit him in the body (they can carry any amount of metal) instead of between the eyes, I had my doubts. We searched the spot, our guide displaying a good deal of polite and unnecessary zeal, I thought, and in a minute or two resumed operations, for the bright orbs were re-appearing all around us.



BLACK ALLIGATOR (*Caiman niger*).

My next shot was more successful. Hit clean through the middle of the brain, the quarry convulsively lashed the water with his unpleasantly powerful tail. That night we came back freighted with a great store of skins, and to-day I have about me in many useful shapes abundant testimony to the efficacy of the simple plan of arousing the curiosity of *Alligator mississippiensis* by means of a bull's-eye carried in the hat.

This, then, is Alligator shooting *en battue*. One can, as I did, carry a rifle on fishing excursions and pot any particularly big specimen approachable.

I had read somewhere that at hibernating time the negro loves to catch the alligator, who falls an easy victim, and that the tail is considered a great delicacy by these native epicures. We tasted him, and though our negro friends are beyond criticism in their judgment of other people's melons and chickens: though they, and they only, can properly appreciate the true merits of opossum meat; yet we were fain to confess to our inability to agree with them in their estimate of this curious musk flavoured and fishy meat.

ALFRED C. HARMSWORTH.

CROQUET—History of the Game—There are not many phenomena in the history of games more curious than the fluctuations in the popularity of Croquet under its various forms. That it was ancient we know from a well-known cut in Strutt of a "curious ancient pastime, from which, I make no doubt, originated the game of billiards." A glance will show that it contains all the essentials of Croquet. Its immediate ancestor, Pall-Mall, the favourite sport of Charles II. and his courtiers, seemed as firmly grounded in public favour as any game could be, but yet it is mainly due to the accidental discovery in a ruined house of the malls and balls which were then used, that we are so much as able to establish the genealogy. It is true that the change is not small from the long straight course of hard-beaten earth, "dressed with powdered cockle-shells," and the "two high arches of iron," to the six or ten hoops upon a closely-cut lawn, but the fact of this development is not so curious as the darkness which hangs over the process. From Whitehall and the Court the pastime seems speedily to have departed, but it was kept up in Brittany, and was also a village game in the South of France. From neither of these, however, did it come back to England, but from Ireland, where it had been played, as was maintained, for an unknown length of time. Its popularity in England was immense, and between 1860 and 1870 it spread, not merely over the island, but over India and the Colonies. The general enthusiasm inspired Capt. Mayne Reid to declare that the game had become "the national pastime," and was "to be cherished as the tree of life"!

The reaction was speedy and complete. After 1875 the game fell away in importance; it became a laughing stock, and the butt of much clumsy jesting. One may fear, indeed, that, two or three years ago, some would have been irreverent enough to turn for an account of it to the article on "Obsolete Sports," but at present there is a distinct revival of interest in it. Many can now be found who confess, with some unnecessary protestations and apologies, that they not only play, but enjoy the game.

The danger that besets it is the lack of any central organisation to control and develop the game, and it may be hoped that the fresh interest in all that concerns the game may bear some lasting fruit. The All England Club of Wimbledon seemed likely to form the rallying point, but it was swept away by the irresistible fashion of Lawn Tennis.

Preparation of Lawn—The first thing needful is a stretch of level turf, where possible, of about thirty by forty yards in extent. Above all, one should guard against choosing a spot which, though fairly smooth, has a steady slope in one direction. Rough places may be made smooth by diligent work with the roller, but for such a general tendency there is no remedy. The roller should be *light*: a heavy roller tends to exaggerate the worst places, especially if used, as it is sure to be, when the ground is soft. A light roller, used constantly, and a well-oiled mowing machine are the only requisites. The grass must have help against invaders. Dandelions and daisies must all be pulled up, and the hoary plantain faced with especial energy. The roots of the last should be dug out with a pen-knife, and the bare space where its leaves have killed all vegetation, re-sown with grass seed in the autumn. There need be no fear of playing on the lawn when soft; a little breaking of the surface seems to strengthen the plant, and the roller soon restores the level, but all "divots" must be replaced at once.

Apparatus—The necessary apparatus is simple, consisting of two 1 in. posts 24 in. high, hoops of iron (varying in number from six to ten according to the setting adopted), and a mallet and ball for each player. The modern *Mallet* usually consists of an ash shaft some 33 in. long, fitted into a cylindrical head, whose length is 8 or 9 in., and diameter 3 in. The head should be of boxwood. Much ingenuity has been expended in contriving mallets of all varieties, which could never miss their aim. Some had looking-glasses fixed on them, which, if focused upon the object ball, secured a hit; others were provided with a leather tipped end, after the fashion of a billiard cue. Ivory was declared to be the very best material for a mallet, and many were actually made of it.

The *Ball* is made either of beech, or, better, of Turkey boxwood, and has a diameter of $3\frac{5}{8}$ in. The maximum number of players allowed by the rules is eight, and there are accordingly eight mallets and eight balls, each differently marked.

Arrangement of Hoops and Posts—The modern setting of the hoops is that known as the Championship or Six-Hoop plan (*see* Fig. 1), which has certainly all the elements of difficulty. Another setting that is sometimes adopted for the sake of variety, and presents several advantages, requires ten hoops, two of which are set crosswise in the middle of the ground to form a cage (*see* Fig. 2). The plan chosen must depend somewhat on the size of the hoops. The Championship hoops for gentlemen in 1872 allowed only $\frac{1}{8}$ in. margin for the ball on either side, whereas the hoops used in the original game were 15 in. to 18 in. wide at the base! Perhaps the best width for ordinary play is $5\frac{1}{2}$ in. to 6 in., which admits of a satisfactory cage.

The Game—Shortly put, the object of the player is to drive his ball through each hoop in its proper order, and from the proper side, and to touch the two sticks or posts, in the fewest number of "turns." A turn or break may consist of any number of strokes. After the first stroke, a player may continue, if he has by it

run through his proper hoop or hit another ball. In the former case, he may again attempt either of the two feats; in the latter, he is obliged to

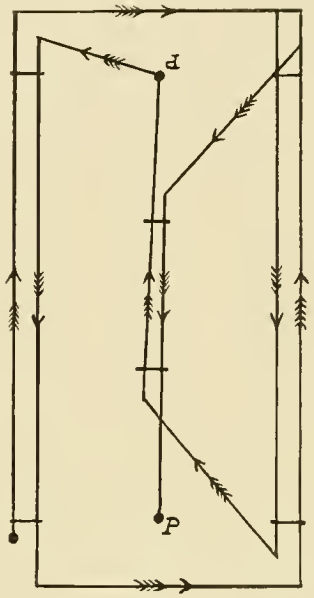


FIG 1

bring his own ball to that which has been hit, and after placing them together to hit his own in such a manner that both are moved. After

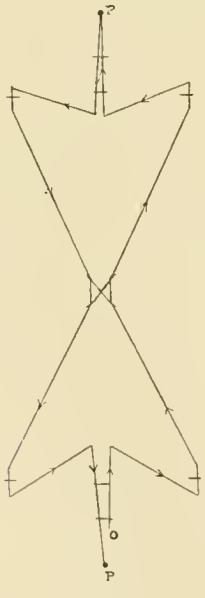


FIG. 2.

this he may again attempt to run through his next hoop, or to hit another ball, when the process is repeated. He may not, however, hit the same ball a second time, unless he has in the interval passed through a hoop in its proper order. Should he fail at any shot, the next player takes the turn.

It was, naturally, some time before the rules were satisfactorily settled, and the codes at first suggested were very complicated. Capt. Mayne Reid, for instance, required 126 rules with much explanation. In 1870, the Conference Code was issued, and that, with the slight modifications of the next two or three years, may be regarded as the standard authority. The most important amendment is that known as the Boundary Line Rule. By this, a player's turn comes to an end at once if he, in hitting the two balls placed together as above, drive either his own or the croqueted ball over the line that limits the Croquet Lawn. The effect of this is to prevent the player from indulging in smashing hits, which drive an opponent to the farthest end of the lawn, or which send his own ball flying over the boundary, to be replaced on the edge, within a yard or so of his partner. From the point of view of vigorous exercise, the game has perhaps been somewhat damaged, but it has gained much in delicacy and judgment.

The ideal form of the game requires four players, one pair playing against the other, or two players, each having two balls. These were the varieties adopted in the Championship games, when Croquet was universal.

Hints on Play—The golden rule of Croquet, as of Whist, is "Play to your partner's hand." It is useless to press on, making hoops, only to be obliged to come back and wait about for one's partner, who has been left behind, and subjected to the attacks of a united couple. So long as a pair can keep together, a game is never lost. Second to this is the warning, never to take an easy shot carelessly. The man who never misses a certainty is a far more dangerous opponent than the brilliant, but erratic player who brings off perhaps two long shots out of five, and who has often a yearning to leave his partner in the lurch in order to try them. Each must find out the position in aiming that best suits himself, but for a close shot there is no safer attitude (and few more inelegant) than to stand well over the ball, hold the mallet low, and swing it between the legs. Never *hit* with the mallet, nor should the hands grasp it, except in the "chop" stroke, very tightly. Let the arms swing quite freely, and it will be found, as in golf, that the work is done more effectively, and with a tithe of the exertion, if the weight of body and mallet is the main force applied.

There are two strokes to be used when the balls are to be croqueted which require and repay a considerable amount of practice. They are:—(1) The rolling, push, or follow-through stroke; and (2) the chop, screw, or stop stroke. In the first, the mallet must keep along its course at the same pace as the balls start, and there must not be the slightest checking at the

moment of contact. Both balls will then run for a considerable, and for much the same, distance. In the "chop" stroke, on the other hand, the object is to move one's own ball as little as possible, and to drive the other well away. In this the mallet should, for once, be gripped tightly, and the ball hit as low as possible. The swing should be entirely checked at the moment of contact, if possible, not at the expense of the turf.

Remember always that however and wherever one's own ball is hit, *the direction* in which the other will tend to go is the line of the two centres produced.

It is perhaps necessary to remind the beginner that the next player must not be allowed to lie so close that he can take advantage of one's mistakes, but should be sent off, with due regard to the Boundary Rule, to the farthest possible distance.

There is no game in which judgment and strategy plays a larger part. Before each stroke one must instinctively ask upon which side of the object ball one would wish to be in case of failure, and play strength accordingly. Roughly speaking, it is well to play hard at an opponent, but gently at a partner, a rule that the partner at his next turn often finds to have been forgotten.

All the countless other devices of Croquet—the getting a "rush," *i.e.* hitting a ball with such force as to drive it into a favourable position for "taking two off"; finessing to the boundary when in difficulties, so that a partner may join one easily, and the distance make it not worth an opponent's while,—all these and their like can never be learned from books, but from hard work on the lawn. This one principle may, however, be again enforced, "*Play to your partner.*"

C. S. COLMAN.

GLOSSARY.

All England Croquet Club—The club was founded in 1866, and had its headquarters at Wimbledon. In 1871 it amalgamated with the National Croquet Club, and became the governing body of the sport. It conducted the annual contest for the championship every July, from 1869 (when the hoops were 7¼ in. wide) until its death. The A.E.C.C. succumbed to the popular enthusiasm for lawn tennis.

Ball—The balls are usually made of boxwood, and the proper diameter is 3⅝ in., and the weight should be 14½ oz. They are painted in various ways so that each player may distinguish his own without difficulty.

Bell—In old-fashioned settings of the hoops, a bell hung from the hoop or cap in the centre of the lawn, and no ball was supposed to have passed through it fairly unless the bell was rung.

Bisque—An extra stroke allowed to the weaker side in order to make the contest equal.

Blocked—To find a useless ball, or the *stick* (*q.v.*) in the way of a shot.

Booby—In early croquet a ball that misses its first hoop; now rarely seen.

Break—A sequence of successful shots at balls or hoops.

Cage—Two hoops crossed at right angles in the centre of the ground, as in the Eglinton Castle setting.

Climbing on the Scapegoat—Said by Captain Mayne Reid to be a technical term for "roqueing a ball into a better place for the player to croquet it, so that the roqueing ball may get in front of its own proper bridge, or obtain some other advantage of position." Equivalent to *rush* (*q.v.*).

Clips—Thin plates of iron, variously coloured, and set upon the hoops which the respective balls were due to pass. They were found to increase the forgetfulness of players and abandoned.

Croquet—(1) The game itself.

(2) The act of hitting at the player's own ball when set against another which it has "roqueted."

(3) In the usual modern sense it may mean (*a*) the first hitting of a friendly or opposing ball; (*b*) the stroke upon them both when set together. *Roquet* is a term now very rarely heard.

Dead Ball—(1) A ball that has gone through all the hoops in their proper order and hit the stick.

(2) The ball of the last player, which has to wait longest for its turn to come again.

Dead Boundary Law—In 1872 the Conference Code made a rule for match play, which has been generally adopted, that if a player in croqueting the balls sent either of them over the boundary, he should at once lose the remainder of his turn.

Double Shot—Two balls lying so close together that if one be missed there is a very good chance of hitting the other.

Grand Round—The complete circuit of all the hoops up to the turning post and back again. Now rarely used.

Hollow Double—Two balls which lie near enough to one another to distract the aim, but not near enough to make the hitting of the one not aimed at likely.

Hong Kong, Off to—The old term for the driving of an opponent's ball from the croquet to the extreme corner of the ground. Also called driving it "up the country."

Hoops—The iron arches through which the ball must be driven. They have varied much in number and width. A book of instructions in 1867 recommended a width of 18 in., whilst the championship of 1872 was played with a width of hoop of 3¾ in. The best for ordinary play is 6 in. The number has varied from ten to six. [*See* SETTING.] The square-topped hoops are to be preferred to the rounded, which are a reminiscence of pall mall and the very early days of croquet, when the hoops were complete circles, "as round as a gong."

Jump Stroke—A stroke which takes the ball clear over another, which may be lying in the way of hoop or object ball. (Also called *Leap-frog stroke.*)

Loose Croquet—The striking of the player's ball when both are set together, without putting one's foot upon it. The form universally adopted now, but formerly only the privilege of the *Rover*, and termed *Roquet Croquet.*

Mallet—Consists of head and handle. The latter is now usually about 2 ft. 9 in. to 3 ft. in length, made of ash, and trimmed to an octagon shape at the top.

The head is cylindrical, generally of boxwood, though sometimes of lignum vitæ, 8 in. in length and 3 in. in diameter, the weight of mallet altogether being about 3½ lbs.

Formerly the mallets were intended for use with one hand, and were very small and light. The heads were of all shapes—some like a barrel, some like a dice-box, some like pickaxes, and some actually trimmed to a leather-covered point like a billiard cue.

Pass Stroke—The hitting of the ball in croqueting so that both go about in the same direction, but the player's ball goes farthest. Really a foul stroke made by pressing the player's ball again after the opponent's has started.

Peg—[*See* POST.]

Player—The one whose turn comes next.

Post—The two sticks which have to be hit by each ball during the progress of the round. They should be 18 in. above the ground, and not less than an inch in diameter. Also called *Peg* and *Stick*, the last two being sometimes used as verbs, for hitting the post.

Roquet—The old and more correct term for hitting the ball off which croquet was to be taken. Now rarely used.

Roquet Croquet—[*See* LOOSE CROQUET.]

Rover—A ball which has passed through all the hoops in order, but has not hit the finishing post.

Rush—A position from which one can hit a ball and drive it into a more convenient position for making the croquet stroke proper. Hence to get a rush upon a ball is to put one's self in such a position.

Settings—The original setting had ten hoops. This was found too easy, and the Eglinton Castle setting with nine hoops, or eight hoops and a cage, was introduced (Fig. 1). Finally came the six-hoop or championship setting (Fig. 2).

Split Stroke—Taking croquet so as to drive the balls on courses nearly at right angles to one another.

Stick—[*See* POST].

Stop Stroke—Taking croquet so as to drive the object ball to a distance, but, by striking one's own ball low, to keep it near the original position. It resembles the screw shot in billiards.

Strike Out—To hit the winning post after passing through the hoops in order.

Take Croquet—After hitting a ball, to carry one's own to it, set it down touching, and then by hitting it, to send both in the desired directions.

Take Two Off—To take croquet in such a way that the ball not hit directly only just moves, whereas the player's ball closely follows the line of the mallet's swing.

Tight Croquet—The old method of taking croquet, which consisted in putting the foot upon one's own ball and driving the other by the shock of the stroke to the required spot. Now illegal.

Toll the Stake—Old term for hitting the post.

Tunnel—A very narrow hoop, or rather arch, of some length, said to have been used in the early days of croquet, but more probably only proposed.

Up Country—[*See* HONG KONG, OFF TO].

Wired—A ball is wired when one or both legs of a hoop are in the way of its effecting the shot desired, or in the way of an opponent who desires to hit it.

THE LAWS OF CROQUET.

1. **Mallets**—There shall be no restriction as to the number, weight, size, shape, or material of the mallets; nor as to the attitude or position of the striker; nor as to the part of the mallet held, provided the ball be not struck with the handle, nor the mace stroke used.

2. **Size of Balls**—The balls used in match play shall be $3\frac{5}{8}$ in. in diameter.

3. **Choice of Lead and of Balls**—It shall be decided by lot which side shall have choice of lead and of balls. In a succession of games the choice of lead shall be alternate, the sides keeping the same balls.

4. **Commencement of Game**—In commencing, each ball shall be placed on the starting spot. [*See* SETTINGS.] The striker's ball, when so placed and struck, is at once in play, and can roquet another, or be roqueted, whether it has made the first hoop or not.

5. **Stroke, when taken**—A stroke is considered to be taken if a ball be moved in the act of striking; but should a player, in taking aim, move his ball accidentally, it must be replaced to the satisfaction of the adversary, and the stroke be then taken. If a ball be moved in taking aim, and then struck without being replaced, the stroke is foul (*see* Law 25).

6. **Hoop, when run**—A ball has run its hoop when, having passed through from the playing side and ceased to roll, it cannot be touched by a straight-edge placed against the wires on the side from which it was played.

7. **Ball driven partly through Hoop**—A ball driven partly through its hoop from the non-playing side cannot run the hoop at its next stroke, if it can be touched by a straight-edge placed against the wires on the non-playing side.

8. **Points counted to Non-Striker's Ball**—A ball driven through its hoop, or against the turning peg, by any stroke not foul, whether of its own or of the adverse side, counts the point so made.

9. **Points made for Adversary's Ball**—If a point be made for an adversary's ball, the striker must inform his adversary of it. Should the striker neglect to do so, and the adversary make the point again, he may continue his turn as though he had played for his right point.

10. **The Turn**—A player, when his turn comes round, may roquet each ball once, and may do this again after each point made. The player continues his turn so long as he makes a point or a roquet.

11. **Croquet imperative after Roquet**—A player who roquets a ball must take croquet, and in so doing must move both balls (*see* Law 25). In taking croquet, the striker is not allowed to place his foot on the ball.

12. **Ball in Hand after Roquet**—No point or roquet can be made by a ball which is in hand. If a ball in hand displace any other balls, they must remain where they are driven. Any point made in consequence of such displacement counts, notwithstanding that the ball displacing them is in hand.

13. **Balls Roqueted simultaneously**—When a player roquets two balls simultaneously, he may choose from which of them he will take croquet; and a second roquet will be required before he can take croquet from the other ball.

14. **Balls found touching**—If at the commencement of a turn the striker's ball be found touching another, roquet is deemed to be made, and croquet must be taken at once.

15. **Roquet and Hoop made by same Stroke**—Should a ball in making its hoop, roquet another that lies beyond the hoop, and then pass through, the hoop counts as well as the roquet. A ball is deemed to be beyond the hoop if it lies so that it cannot be touched by a straight-edge placed against the wires on the playing side. Should any part of the ball that is roqueted be lying on the playing side of the hoop, the roquet counts, but not the hoop.

16. **Pegging out**—If a rover (except when in hand) be caused to hit the winning peg by any stroke of the same side, not foul, the rover is out of the game, and must be removed from the ground. A rover may similarly be pegged out by an adverse rover.

17. **Rover pegged out by Roquet**—A player who pegs out a rover by a roquet loses the remainder of his turn.

18. **Balls sent off the Ground**—A ball sent off the ground must at once be replaced 3 ft. within the boundary, measured from the spot where it went off, and at right angles to the margin. If this spot be already occupied, the ball last sent off is to be placed anywhere in contact with the other, at the option of the player sending off the ball.

19. **Ball sent off near Corner**—A ball sent off within 3 ft. of a corner is to be replaced 3 ft. from both boundaries.

20. **Ball touching Boundary**—If the boundary be marked by a line on the turf, a ball touching the line is deemed to have been off the ground. If the boundary be raised, a ball touching the boundary is similarly deemed to have been off the ground.

21. **Ball sent off and returning to Ground**—If a ball be sent off the ground, and return to it, the ball must be similarly replaced, measuring from the point of first contact with the boundary.

22. **Ball sent within 3 ft. of Boundary**—A ball sent within 3 ft. of the boundary, but not off the ground, is to be replaced as though it had been sent off, except in the case of the striker's ball, when the striker has the option of bringing his ball in, or of playing from where it lies.

23. **Boundary interfering with Stroke**—If it be found that the height of the boundary interferes with the stroke, the striker, with the sanction of the umpire, may bring in the balls a longer distance than 3 ft., so as to allow a free swing of the mallet. Balls so brought in must be moved in the line of aim.

24. **Dead Boundary**—If, in taking croquet, the striker send his own ball, or the ball croqueted, off the ground, he loses the remainder of his turn; but if by the same stroke he make a roquet, his ball, being in hand, may pass the boundary without penalty. Should either ball, while rolling after a croquet, be touched or diverted from its course by an opponent, the striker has the option given him by Law 26, and is not liable to lose his turn should the ball which has been touched or diverted pass the boundary.

25. **Foul Strokes**—If a player make a foul stroke, he loses the remainder of his turn, and any point or roquet made by such stroke does not count. Balls moved by a foul stroke are to remain where they lie, or be replaced, at the option of the adversary. If the foul be made when taking croquet, and the adversary elect to have the balls replaced, they must be replaced in contact as they stood when the croquet was taken. The following are foul strokes:—

(*a*) To strike with the mallet another ball instead of or besides one's own, in making the stroke.
(*b*) To spoon—*i.e.* to push a ball without an audible knock.
(*c*) To strike a ball twice in the same stroke.
(*d*) To touch, stop, or divert the course of a ball when in play and rolling, whether this be done by the striker or his partner.
(*e*) To allow a ball to touch the mallet in rebounding from a peg or wire.
(*f*) To move a ball which lies close to a peg or wire by striking the peg or wire.
(*g*) To press a ball round a peg or wire (crushing stroke).
(*h*) To play a stroke after roquet without taking croquet.
(*i*) To fail to move both balls in taking croquet.
(*k*) To croquet a ball which the striker is not entitled to croquet.

26. **Balls touched by Adversary**—Should a ball when rolling, except it be in hand, be touched, stopped, or diverted from its course by an adversary, the striker may elect whether he will take the stroke again, or whether the ball shall remain where it stopped, or be placed where, in the judgment of the umpire, it would have rolled to.

27. **Balls stopped or diverted by Umpire**—Should a ball be stopped or diverted from its course by an umpire, he is to place it where he considers it would have rolled to.

28. **Playing out of Turn, or with the Wrong Ball**—If a player play out of turn, or with the wrong ball, the remainder of the turn is lost, and any point or roquet made after the mistake. The balls remain where they lie when the penalty is claimed, or are replaced as they were before the last stroke was made, at the option of the adversary. But if the adverse side play without claiming the penalty, the turn holds good, and any point or points made after the mistake are scored to the ball by which they have been made (that is, the ball is deemed to be for the point next in order to the last point made in the turn), except when the adversary's ball has been played with, in which case the points are scored to the ball which ought to have been played with. If more than one ball be played with during the turn, all points made during the turn, whether before or after the mistake, are scored to the ball last played with. Whether the penalty be claimed or not, the adversary may follow with either ball of his own side.

29. **Playing for Wrong Point**—If a player make a wrong point it does not count, and, therefore (unless he have, by the same stroke, taken croquet, or made a roquet), all subsequent strokes are in error, the remainder of the turn is lost, and any point or roquet made after the mistake. The balls remain where they lie when the penalty is claimed, or are replaced as they were before the last stroke was made, at the option of the adversary. But if the player make another point, or the adverse side play, before the penalty is claimed, the turn holds good; and the player who made the mistake is deemed to be for the point next in order to that which he last made.

30. **Information as to Score**—Every player is entitled to be informed which is the next point of any ball.

31. **State of Game, if disputed**—When clips are used, their position, in case of dispute, shall be conclusive as to the position of the balls in the game.

32. **Wires knocked out of Ground**—Should a player, in trying to run his hoop, knock a wire of that hoop out of the ground with his ball, the hoop does not count. The ball must be replaced, and the stroke taken again; but if by the same stroke a roquet be made, the striker may elect whether he will claim the roquet or have the balls replaced.

33. **Pegs or Hoops not upright**—Any player may set upright a peg or hoop, except the one next in order; and that must not be altered except by the umpire.

34. **Ball lying in a Hole or on Bad Ground**—A ball lying in a hole or on bad ground may be moved with the sanction of the umpire. The ball must be put back—*i.e.* away from the object aimed at—and so as not to alter the line of aim.

35. **Umpires**—An umpire shall not give his opinion, or notice any error that may be made, unless appealed to by one of the players. The decision of an umpire, when appealed to, shall be final. The duties of an umpire are—

(*a*) To decide matters in dispute during the game, if appealed to.
(*b*) To keep the score, and, if asked by a player, to disclose the state of it.
(*c*) To move the clips, or to see that they are properly moved.
(*d*) To replace balls sent off the ground, or to see that they are properly replaced.
(*e*) To adjust hoops or pegs not upright, or to see that they are properly adjusted.

36. **Absence of Umpire**—When there is no umpire present, permission to move a ball, or to set up a peg or hoop, or other indulgence for which an umpire would be appealed to, must be asked of the other side.

37. **Appeal to Referee**—Should an umpire be unable to decide any point at issue, he may appeal to the referee, whose decision shall be final; but no player may appeal to the referee from the decision of an umpire.

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CURLEW—[*See* SHORE SHOOTING].

CURLING is the most characteristic of Scottish sports, and in one form or other has been practised in that country for more than four centuries back. From some of the words found in the glossary annexed hereto, such as Kuting, Rink, Bonspiel, Tee, etc.,—some have maintained that the game was introduced into Scotland from the Low Countries, but this inference from etymology is contradicted by historical facts, and there is little doubt that curling, in its origin as in its development, is peculiarly Scottish. Although now to be found in most other countries where ice abounds, there is always a Scottish ring about the game, and even more than golf, which has now spread over the world, it is regarded as a national sport, the title generally given to it by its devotees being—"Scotland's ain game." At first the game seems to have been a kind of quoiting on the ice, a stone rounded by some river[1] and weighing a few pounds being used, with a niche for the thumb on one side, and one for the fingers on the other. With a curving sweep from behind, the player pitched his large pebble, and the ice carried it to the tee or mark aimed at, the thrower making due allowance for the nature of the surface in delivering his shot. This was the Kuting-Stone or Pilty-cock period of curling. Next came the Giant, or Boulder age, when the curler took a large boulder or block from the river-bed, inserted a rough iron handle therein, and propelled it along the ice to the desired goal. The variety of weight and shape of stone during this period must have been infinite, for while 60 lbs. was about the minimum, we hear of some stones which actually weighed 200 lbs., and one is on exhibition which turns the scale at 117 lbs. Each player used one stone, and when the many-shaped boulders lay around the Gogsee or Tozee they must have had a motley appearance, and some of their owners must have been giants. About the middle of last century the curling stone was found in a more civilised shape, the formation of clubs for the purpose of enjoying the sport having a good deal to do with the improvement. By the end of the century the stones were all rounded with more or less precision, though some were still rather uncouth in appearance, and the variety of chiselling so great, that force rather than scientific accuracy ruled the play. The two most renowned curling clubs of last century were the Canonmills and the Duddingston clubs. As a proof of the national character of the game, it may be stated that in the Scottish capital the magistrates used to march in procession, headed by a band playing the *Curler's March*, to open the winter's sport on the Nor' Loch, where the Edinburgh curlers played before they were driven therefrom to Canonmills when the Loch was drained dry for city improvements. In the history of this popular pastime, the most important event was the institution in 1838 of the Grand Caledonian Curling Club, the object of which was to be a Curling Union, in which all clubs would be associated, and which, by representatives from all its clubs annually convened as a curling parliament, would regulate the laws of the game at home and abroad. This association or union has been most successful, and it may safely be said that no sport is so admirably supervised and regulated as Curling, a fact which is due to the admirable way in which the business of the head club is conducted.[2]

Curling, like golf, is not only ancient, but also royal. There are some shadowy traditions that several of the Stuart kings played the game; and the unfortunate Darnley, who was for a time husband of the still more unfortunate Queen Mary, is reputed to have been a curler. When the Prince Consort and her Majesty the Queen were on a visit to Scotland, they were initiated into the mysteries of the game by the Earl of Mansfield, then President of the Grand Club, and the Prince then agreed to become its patron. Soon after, the club received permission to wear the title "Royal," and as "The Royal Caledonian Curling Club" it has continued to preside over the sport. From its institution may be dated the great improvement that has made the game one of the most scientific, and required the development of the stones on such lines that they are now "things of beauty." By awarding medals for competition between clubs and districts, and by the great national gathering at Carsebreak for the Grand Match, in which the North of the Forth curlers meet those of the South in battle; by the recent institution of the International Match—England *v.* Scotland, and in a thousand other ways, the Royal Club has fostered and advanced the fascinating ice-game, and made it popular far beyond the borders of its home. Through the club's influence, the sport will, no doubt, become still more popular. There is certainly no manlier, healthier game, and the countries are fortunate in which it has been taken up and practised with enthusiasm.

Ice is, of course, the first requisite for curling. But the ice must be in good condition. Quality is of more importance than quantity. Frost being so fickle in our country, curlers have in many places had cement ponds laid out. With a few degrees of frost they can have a game on these by sprinkling water over the

[1] Hence the term channel-stone still given to the curling-stone.

[2] The present secretary of the club is Mr. A. Davidson Smith, C.A., and the offices are at 4A, York Place, Edinburgh. In the *Annual* published by the club may be found all information as to the laws of the game, literary contributions relating to it, and a list of all the associated clubs and their members.

surface, which immediately freezes. In this way play can be obtained when the natural ice is not strong enough. At various times and places, and at great expense, ice rinks have been constructed, where ice is made by an artificial process, and curlers and skaters can enjoy themselves all the year round in a handsome building, independent of the changes of the climate. In Canada, with the intense frost which there prevails, curlers have natural ice with covered rinks, and all the comforts which these are supposed to afford. But curling is best enjoyed in the open air, and is to be seen at its best when Greek meets Greek on some moorland loch surrounded by snow-covered mountains. The majority of curling clubs have ponds constructed so that there is no danger to the players from the depth of the water, should the ice give

Fig. 1.—A Scottish Rink.

way. These have to be constructed by puddling the bottom with clay about 6 in. thick, and making embankments suitable to the depth. The cost is not great, and the up-keep of such ponds is also simple, so that to start a curling club need not be an expensive matter. Nor is the curler's outfit costly. He must have a Broom, or Kowe, to sweep the ice when directed, for sweeping is a most important part of the game; but the best brooms, made from the plant of that name, cost nothing, and if that cannot be had, two shillings will procure a broom of sufficient power. The curler's chief equipment is a pair of stones exactly matched. These range in value from 30*s.* to £5, and fancy prices are, of course, paid for fancy pairs. Each stone is fitted with a reversible handle and bolt, a good pair of handles being procurable for 10*s.* or 12*s.* 6*d.* The open or swan-necked are generally used, but a few use the closed oval variety. Curling-stones are named after the places where they are procured. The principal varieties now in the market are Ailsa Craig, Crawfordjohn, Burnock Water, Douglas Water, Crieff, Carsphairn, and Tinkernhill. By far the larger proportion of curling-stones now in use bear the name of Ailsa Craig, from which they are quarried, and cut into square blocks before being sent to the manufacturers to be rounded and polished. They are so hard that they best resist the effect of hard knocks, and in Canada they are preferred because the excessive frost does not affect them so much as softer varieties. In the home country, Crawfordjohn and Burnock Water are also very popular stones. It is important, however, that these should be boulders before being wrought into shape, for the quarried stones, owing to the blasting, are often *strained* and therefore liable to fracture; whereas the boulders, if well rounded, must have come through a long experience of grinding against each other until their flaws have all been detected and destroyed. By a recent resolution of the Royal Club, the maximum weight of the curling-stone (and handle) has been fixed at 44 lbs. From 40 lbs. to 44 lbs. is a suitable weight for the lead or first-hand player, while from 33 lbs. to 40 lbs. is appropriate for other players. The majority of stones will be found to be included between 35 lbs. and 38 lbs. (At Montreal, Quebec, and other places in Canada, where iron has to be used in place of stone, the usual weight is from 60 lbs. to 70 lbs.) Each stone has two sides, one for dull, the other for keen ice. The former is usually highly polished, and so curved that the stone runs on a pivot, thus getting easily through slush when the ice is "baugh" or soft; but in Canada, and in many cases at home, a small hollow about 2½ in. wide is scooped out, and the stone, running on the ring or rim of the hollow, is supposed to keep better hold of the ice. The dull side of the stone, which is used when the ice is keen, has a much larger concave or hollow, the diameter of the ring in this case ranging from 5 in. to 7 in. This gives the stone a better catch of the ice, and all leading stones should be thus concaved, that they may be able to keep their position in the "house." This side is not so highly polished as the other. No stone is allowed in play whose circumference exceeds 36 in., and its height must not be less than one-eighth part of its greatest circumference. Those who wish to provide themselves with stones and other curling requisites will find the names of manufacturers in the advertising pages of the Royal Club *Annual*, which costs one shilling, and may be had at the club's offices from the secretary. Before describing rink-play, which is the proper game of Curling, we may show the various parts of the game by "points," which are practised by curlers, and for which one day in the season is usually set apart. Just as a golfer might practice driving, lofting, and putting preparatory to a full game at golf, so the curler may learn his art by trying his hand at the various "points" which have been selected to illustrate the anatomy of Curling.

The following are *The Rules for the Point Game*, laid down by the Royal Club:—

1. Competitors shall draw lots for the rotation of play, and shall use two Stones.

2. The measurement of the Rink for Point Play shall be in conformity with the provisions of Rule 1 for Rink Play.

3. Two Circles, having a radius of 4 ft. and 7 ft. respectively, shall be drawn round the Tee, and a line through the centre of these circles to the Hog score.

4. Every Competitor shall play four shots at each of the nine following points of the game, viz., Striking, Inwicking, Drawing, Guarding, Chap and Lie, Wick and Curl in, Raising, Chipping the Winner, and Drawing through a Port, according to the definitions and diagrams here given.

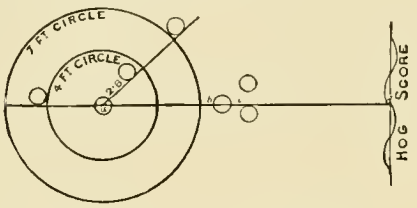
5 In Nos. 2, 6, 8, and 9, and at *Outwicking* when played, two Stones shall be played on the right and two on the left.

6. No Stone shall be considered *without* a circle unless it is entirely clear of that circle.

NOTE 1.—No scores made in Local Competitions shall be reported in the *Annual* unless these have been conducted under the above Rules.

NOTE 2.—Much time will be saved if two Rinks be prepared lying parallel to each other, the Tee of the one being at the reverse end of the other Rink; every Competitor plays both Stones up the one Rink, and immediately afterwards both down the other, finishing thus at each round all his chances at that point.

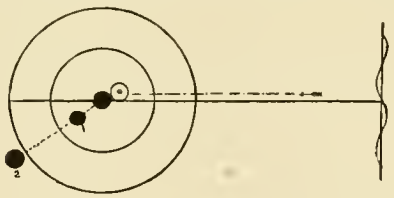
The following is the diagram to be drawn on the ice before playing :—



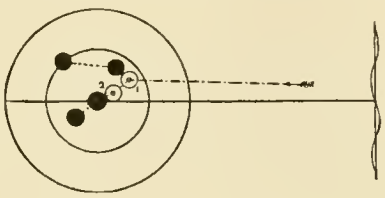
a–b = 8 ft. a–c = 10 ft. a–d = 21 ft.

Placed Stones shown ● Played Stones shown ⊙

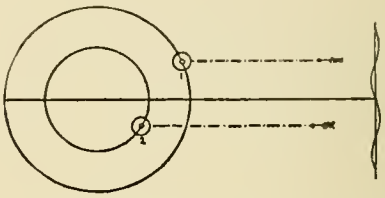
The various points and the values given for them in the point game are shown in the diagrams and definitions here given :—



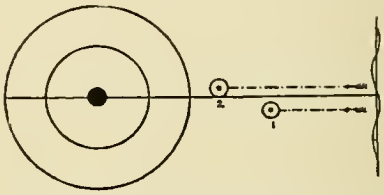
1. Striking—A Stone being placed on the Tee, if struck, shall count 1; if struck out of the 7-ft. circle, it shall count 2.



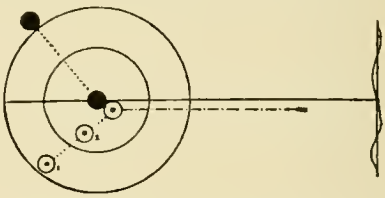
2. Inwicking—A Stone being placed on the Tee, and another with its inner edge 2 ft. 6 in. from the Tee, and its fore edge on a line drawn from the Tee at an angle of 45° with the central line, if the played Stone strike the latter on the inside, it shall count 1; if it perceptibly move both Stones, it shall count 2.



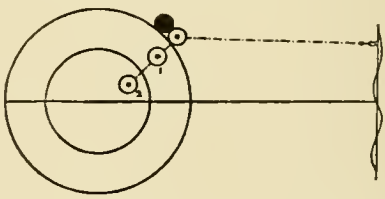
3. Drawing—A Stone being played, if the same lie within or on the 7-ft. circle, it shall count 1; if within or on the 4-ft. circle, it shall count 2.



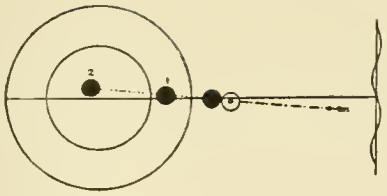
4. Guarding—A Stone being placed on the Tee, if the Stone played rest within 6 in. of the central line, it shall count 1; if on the line, it shall count 2. It must be over the Hog, but must not touch the Stone to be guarded.



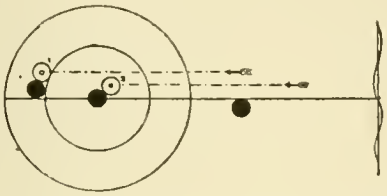
5. Chap and Lie—A Stone being placed on the Tee, if struck out of the 7-ft. circle, and the played Stone lie within or on the same circle, it shall count 1; if struck out of the 7-ft. circle, and the played Stone lie within or on the 4-ft. circle, it shall count 2.



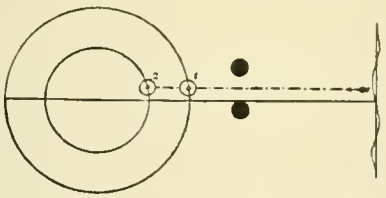
6. Wick and Curl in—A Stone being placed with its inner edge 7 ft. distant from the Tee, and its fore edge on a line making an angle of 45° with the central line, if the same be struck, and the played Stone curl on or within the 7-ft. circle, it shall count 1; if struck, and the played Stone curl on or within the 4-ft. circle, it shall count 2.



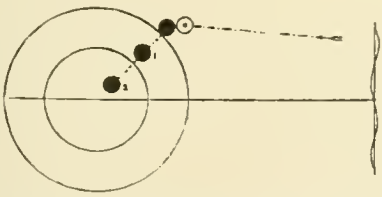
7. **Raising**—A Stone being placed with its centre on the central line and its inner edge 8 ft. in front of the Tee, if it be struck into or on the 7-ft. circle, it shall count 1 ; if struck into or on the 4-ft. circle, it shall count 2.



8. **Chipping the Winner**—A Stone being placed on the Tee, and another with its inner edge 10 ft. in front, just touching the central line, and half guarding the one on the Tee, and a third Stone being placed 4 ft. behind the Tee, with its inner edge touching the central line, but on the opposite side from that on which the guard is placed, if the played Stone strike the Stone placed behind the Tee, it shall count 1 : if it strike the Stone on the Tee, it shall count 2.



9. **Drawing through a Port** A Stone being placed with its inner edge on the central line 10 ft. in front of the Tee, and another Stone on the opposite side and with its inner edge 2 ft. from the central line, if the played Stone pass between these two Stones without touching either, and rest within or on the 7-ft. circle, it shall count 1 ; if within or on the 4-ft. circle, it shall count 2.



Outwicking—A Stone being placed with its inner edge 7 ft. distant from the Tee, and its centre on a line making an angle of 45° with the central line, if struck within or on the 7-ft. circle, it shall count 1 ; if struck within or on the 4-ft. circle, it shall count 2.

This point is only played in the event of two or more competitors gaining the same number of shots.

If the competition cannot be decided by these shots, the Umpire shall order one or more of the preceding points to be played again by the Competitors who are equal.

The point game serves a good purpose. It shows how difficult curling is ; for while it is possible to score 72 at these 8 points, no one has ever done so, or hoped to do so. Twenty-five is accounted a good score, and medals, in the great majority of clubs, are won with scores under that figure.

These points, as we have indicated, are only the "bones" of curling. The living game is the rink-game. The word *Rink* has two meanings. In one case it is the team of four players.

Fig. 2.—A Swiss Rink.

When this rink is made up, with a skilled and tried hand as skip or captain, and three other trusty players under him, and three opponents under their skip are drawn against them in battle array, the contest begins. The rink is also the name for the field of battle itself. This has to be clearly drawn and defined, for it is not only the slippery nature of the field, but also its narrowness, that makes the curling fight so keen. The game is not allowed to go on "all over the place," but a small portion of the ice is taken up, scores and broughs or circles laid down, and limitations fixed which give intensity and excitement to the play. We must now proceed to give a diagram of the ground, or *Rink*.

The following directions comprise in brief the chief requirements of the diagram and conditions of the rink. It need scarcely be explained that the dark lines bounding the diagram are not to be drawn, and that rinks may be multiplied according to the extent of

the pond and of the match, without making any boundaries of that kind, sufficient space being afforded for each two rinks of players to have their game.

DIRECTIONS.

1. The Tees to be 38 yds. apart.

2. Around each Tee draw a circle having a radius of 7 ft.

[Inner circles may also be drawn.]

3. In alignment with the Tees, draw central lines to points 4 yds. behind each Tee.

4. Draw scores across the Rink at right angles to the central line, viz. :—

(*a*) The *Foot Score*—18 in. in length, 4 yds. behind each Tee.

(*b*) The *Back Score*—behind and just touching outside the 7-ft. circle.

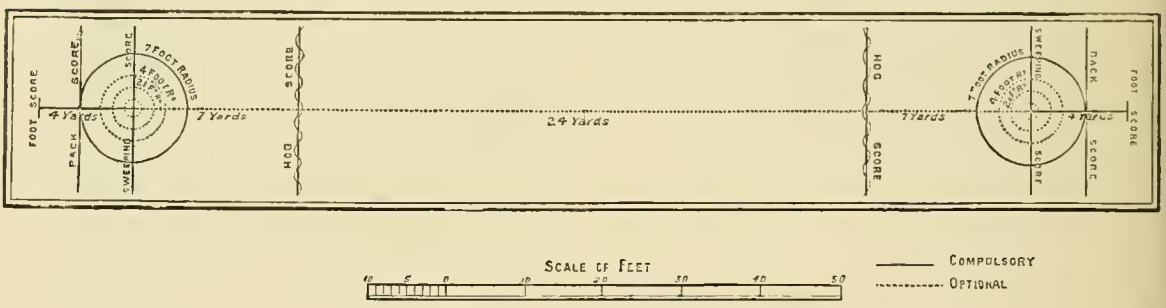
(*c*) The *Sweeping Score*—across the 7-ft. circle and through each Tee.

(*d*) The *Hog Score*—Distant from the Tee one sixth part of the distance between the Foot Score and the further Tee.

N.B.—The length of the Rink for play is 42 yds. It may be shortened, but in no case shall it be less than 32 yds.

All measurements of shots shall be from the centre of the Tee to the nearest part of the stone.

Diagram to be drawn on the Ice and referred to throughout the Rules as the Rink.



With the diagram and directions before us, we may now deal with the rules of the game as drawn up and recently revised by the Royal Club.

THE RULES OF THE GAME OF CURLING.

1. All Matches shall be of a certain number of Heads, or Shots, or by Time as may be agreed on, or as fixed by an Umpire at the outset. In the event of Competitors being equal, play shall be continued by all the Rinks engaged for another Head or Heads until the Match has been decided.

2. Every Rink of players shall be composed of four a side, each using two Stones. The rotation of play observed during the first Head of a Match shall not be changed.

3. The Skips opposing each other shall settle by lot, or in any other way they may agree upon, which party shall lead at the first Head, after which the winners of the preceding Head shall do so.

4. All Curling-Stones shall be of a circular shape. No Stone, including handle, shall be of a greater weight than 44 lbs. imperial, or of greater circumference than 36 in., or of less weight than one eighth part of its greatest circumference.

5. No Stone shall be substituted for another (except under Sections 10 and 14) after a Match has been begun, but the sole of a Stone may be reversed at any time during a Match, provided the player is ready to play when his turn comes.

6. Should a Stone be broken, the largest fragment shall be considered in the Game for that Head—the player being entitled to use another Stone, or another pair, during the remainder of the Game.

7. When a played Stone rolls over, or comes to rest on its side or top, it shall be put off the ice.

8. Should the Handle quit the Stone in delivery, the player must keep hold of it; otherwise he shall not be entitled to replay the shot.

9. Players, during the course of each Head, shall be arranged along the sides, but well off the centre of the Rink, as the Skips may direct; and no one, except when sweeping according to rule, shall go upon the centre of the Rink, or cross it, under any pretence whatever. Skips only shall be entitled to stand within the Seven-Foot Circle. The Skip of the playing party shall have the choice of place, and shall not be obstructed by the other Skip in front of the Tee, while behind it the privileges of both, in regard to sweeping, shall be equal.

10. Each player must be ready to play when his turn comes, and must not take more than a reasonable time to play. Should a player play a wrong Stone, any of the players may stop it while running; but if the mistake is not noticed till the Stone is at rest, the Stone which ought to have been played shall be put in its place, to the satisfaction of the opposing Skip.

11. If a player should play out of his turn, the Stone so played may be stopped in its progress, and returned to the player. Should the mistake not be discovered till the Stone is at rest, or has struck another Stone, the opposing Skip shall have the option of adding one to his score and allowing the Game to proceed, or of declaring the Head null and void. If another Stone be played before the mistake is discovered, the Head must be finished as if it had been properly played from the beginning.

12. The sweeping shall be under the direction and control of the Skips. The player's party may sweep the ice from the Hog Score next the player to the Tee, and any Stone set in motion by a played Stone may be swept by the party to which it belongs. When snow is falling or drifting, the player's party may sweep the ice from Tee to Tee. The sweeping shall always be to a side, and no sweepings shall be left in front of a running Stone. Both Skips have equal right to clean and sweep the ice behind the Tee at any time, except when a player is being directed by his Skip. At the end of any Head, either of the Skips may call upon the whole of the players to clean and sweep the entire Rink. If objected to, this shall be subject to the approval of the acting Umpire.

13. (*a*) If, in sweeping or otherwise, a running Stone is marred by any of the party to which it belongs, it may, in the option of the opposing Skip, be put off the ice; but if by any of the adverse party, it may be placed where the Skip of the party to which it belongs shall

direct. If marred in any other way, the player shall replay the Stone.

(*b*) Should any played Stone be displaced before the Head is reckoned, it shall be placed as nearly as possible where it lay, to the satisfaction of the Skip opposed to the party displacing. If displaced by any neutral party, both Skips should agree upon the position to which it is to be returned; but if they do not agree, the Umpire shall decide.

14. No measuring of shots shall be allowed previous to the termination of the Head. Disputed shots shall be determined by the Skips; if they disagree, by the Umpire; or, when there is no Umpire, by some neutral person chosen by the Skips. All measurements shall be taken from the centre of the Tee to the nearest part of the Stone.

15. The Skip shall have the exclusive regulation and direction of the Game for his Rink, and may play last Stone, or any part in the Game he pleases, but he shall not be entitled to change his position when that has been fixed. When his turn to play comes, he shall select one of his players to act as Skip in his place, and take the position of an ordinary player. He shall not have any choice or direction in the game till he returns to the Tee as Skip.

16. If any player engaged in the Game shall speak to, annoy, taunt, or interrupt another, not being of his own side, while in the act of delivering his Stone, one shot for each offence may be added to the score of the party so annoyed.

17. If from any change of weather after a Match has been begun, or from any other reasonable cause, one party shall desire to shorten the Rink, or to change to another, and if the two Skips cannot agree, the Umpire shall, after seeing one end played, determine whether and how much the Rink shall be shortened, or whether it shall be changed, and his decision shall be final. Should there be no acting Umpire, or should he be otherwise engaged, the two Skips may call in any neutral Curler to decide, and his powers shall be equal with those of the Umpire. The Umpire shall, in the event of the ice appearing to him to be dangerous, stop the Match. He shall postpone it, even if begun, when the state of the ice is in his opinion not fitted for testing the Curling skill of the players. Except in very special circumstances, of which the Umpire shall be judge, a Match shall not proceed, or be continued, when a thaw has fairly set in, or when snow is falling and likely to continue during the Match, nor shall it be continued if darkness comes on to prevent the played Stones being well seen by players at the other end of the Rink. In every case the Match, when renewed, must be begun *de novo*.

18. Every Stone shall be eligible to count which is not clearly outside the Seven-Foot Circle. Every Stone which does not clear the Hog-Score shall be a Hog, and must be removed from the ice, but no Stone shall be considered a Hog which has struck another Stone lying in position. Stones passing the Back Score, and lying clear of it, must be removed from the ice, as also any Stone which in its progress touches the swept snow on either side of the Rink.

At the opening of the game the two skips take their place at the Boardhead to direct their players. Skip A having won the toss, calls on his "lead" to play. The lead "fits his tee," that is, gets himself into proper position on the crampit or iron footboard, which with its underspikes fixed in the ice is prevented from slipping. A canny, or quiet, draw is expected from the lead, and it is better that his stone, when spent, should lie short of the tee, where it is in the way of promotion, than be past, when it is not likely to count. Skip B now has his turn, and he tries to get his leader to play a stone nearer the tee than his neighbour. So the game goes on. If either skip gets a stone into good position, he tries to get it guarded or protected by the next player. When the three on each side have done their parts the skips

Fig. 3.—A Skip at Work.

then take the position of ordinary players, each being directed by his third or hin'-han' player. Very often the fate of the end or head depends on them, so they require to be cool and experienced players. The skips having finished, the "end" or "head" is counted. All stones that

Fig. 4.—A Player fitting his Tee.

lie within the 7-ft. ring are eligible for counting, and if one skip had all his shots so well played as to lie therein, while none of his opponent's are in the desired territory, he might actually score 8. This, however, is a rare occurrence in the game. Indeed, the game is best when it is

a tussle for one shot at each end, and that depending on the last stone. Curling has been called bowling on the ice, but a true curler would call bowling a very feeble shadow of his favourite game. A stone is useless that does not reach the colly or hog score, and of no

FIG. 5.—HIS EYE ON THE SKIP.

value if it passes out of the parish, or 7-ft. ring. This confines the area of play, and calls for greater nicety of calculation than in bowling. The *twist*, which corresponds to the bias at bowling, is also a much more scientific action as seen in curling. The stone itself gives no assistance by an overweighted side as in the case of a bowl. By an elbow-in or elbow-out turn (which is really more from the wrist than from the elbow) a stone may be made to curl round a guard and find a winner, or to go straight to the tee when the bias of the ice leads away from it; the in-turn is made when the curl is to be toward the right, the out-turn when it is to the left. This is the acme of scientific play, and is seen to perfection on the Canadian rinks. where they have more practice and generally better ice than in this country. Without this power the player is at the mercy of the bias, and must content himself with such a "borrow" as will eventually lead his stone to the place aimed at.

Any ordinary match will give occasion for all the "points" formerly described being required. But others abound as infinite and varied as Cleopatra's charms. Some are of the quiet order. The player will be called on to "crack an egg," to "come snoovin down the howe and chuckle gently to the patlid," to "edge in to the fireside," to "smell the ring," to "cuddle into Grannie's wing," to "kittle up" one stone and let another "die" as his skip directs, to "pit doon a bit sidelin' shot on 'ither side the Wittyr'," and so on, all these directions being redolent of the home of the game. Or, as desperate diseases require desperate remedies, he may be asked to "come wi' a hair o' pith," and "cannon" or "redd the hoose"; he may be asked to "ride" out the winner or drive a "bullet" into him, or if things appear hopeless he may simply try "a thunderin' cast," and wait the result of rebutting, for strange things happen betimes in the parish when every way to victory seems barred. Only recently, in a match played at Edinburgh, one side were lying five shots, and the skip of the other side sent up his last stone in desperation and with all his might: when the air cleared, it was found that the five shots of the enemy had all been removed, and that his own side actually lay five shots!

It is essential in curling that implicit obedience be given by the players to the skip, and when they are not playing the members of a rink should all be on the alert, ready to sweep their utmost or to desist from sweeping, as the skip directs. Indeed, the importance of this part of the game can scarcely be over-estimated. "Keep your eye on the skip" is a good rule for the player when about to deliver his stone. Some hunker, others stand half erect. There is no certain rule. But a player who gets into position in the style of the Fig. No. 5, follows what appears to us the best plan for taking accurate aim and having complete power over the stone. As he elevates his body he raises the stone, and, stepping forward, he brings it down in such a gentle curve that it meets the ice without friction and has a good start in its career, which in curling, as in life, goes for much. Figs. 5, 6, 7, 8 are illustrations of various stages in the swing and delivery of the stone which may all be studied with advantage.

It is claimed for curling that it is the healthiest of all sports, giving "birr and smed-

FIG. 6.—SOLING THE STONE.

dum" to the body at the season of the year when it is most needed. Also that it is the most democratic, for on the ice peer and peasant are equal, and Jack is even better than his master, if he can "guard" or "draw" or "wick a bore" in better style. Certainly no game is

more sociable. It is not only that players meet with heartiest "grip" in these matches on the ice, but from time immemorial there has followed on the day's play the evening's diversion, when victors and vanquished meet to partake of "beef and greens," and fight their battles over again as the toddy goes round. Toasts and sentiments relating to the game are proposed, such as "The King and the Core," "The Courts of Just-ice," "The Land o' Cakes and her ain game o' Curlin'," "May we ne'er be a hog, when we should be in the hoose," "May curlers on life's slippery rink frae cruel rubs be free." Many clubs have also "courts," at which new members are "brothered" or "initiated." These courts are the occasion of many high jinks, the candidates being put through some extraordinary performances prior to receiving the "word" and the "grip." During the meeting fines are imposed for all kinds of factitious offences, and "the roupin o' the stoup," or sale

FIG. 7.—A GOOD DELIVERY.

of the box of fines to the highest bidder, closes the hilarious meeting. Dr. Norman Macleod and others have written spirited curling songs which help to make such meetings all the merrier.

Curling has not yet taken such a hold of England as golf. But it is gradually making way in the south, there being now forty English clubs in direct association with the Royal Club, which has 548 clubs in Scotland. The majority of the English clubs have combined to form an association of their own with its headquarters at Malton. Associated clubs are found in other places—Ireland 1, Canadian Branch 24, Newfoundland 2, New Zealand 7, Nova Scotia 2, Russia 1, Switzerland 2, United States 2. This list does not include all clubs, but only those directly under rule of the Royal Club. In the United States there is the Grand National Curling Club,[1] with twenty-five different local clubs under its care. Then, besides the Canadian clubs above noted, there exists the Manitoba Branch of the Royal Caledonian Curling Club,[2] which has no less than eighty-seven affiliated clubs, and which, in respect of the amount of play afforded each season, is perhaps the most favoured of all curling organisations.

Full information as to the evolution and science of curling will be found in *The History of Curling*, by the Rev. J. Kerr (Douglas, Edinburgh). *The Annual* of the Royal Caledonian Curling Club, from which we have been permitted to take the diagrams in this article, contains all rules and regulations as to the game. The Grand National Club, and the Canadian Branch above referred to, both issue *Annuals* with information of the same kind, in addition to lists of clubs.

JOHN KERR.

GLOSSARY.

Baugh ice—Damp or bad ice.

Beef and greens—The traditional dish at a curler's dinner.

Bias—Any deviation of the ice from the level.

Boardhead—The whole 14-ft. circle around the *tee* (*q.v.*). Also called HOUSE and PARISH.

Bonspeil—A curling match between two rival districts or parishes. To be distinguished from **speils**, which are properly, according to Christopher North, matches between members of the same society, or between a limited number of adversaries.

Borrow—The width of ice to be allowed for bias if a stone played without the twist is to find the mark.

Break an egg on—To touch another stone gently.

Brittle shot—An angular cannoning shot.

Broom cowe—[*See* COWE].

Broughs—Circles drawn around the *tee* to assist the players in deciding what stone is nearest. Outside of the circle of 7 ft. radius no stone can count.

Bullet shot—A stone played hard and straight in order to drive another from its position.

Cannoning in the technical curling sense is the driving of one of the guards (*q.v.*) upon the winner (*q.v.*) with such a velocity, and at such an angle that both go off the tee, whilst the player's stone, following on, takes the place the winner has left.

Channel stone—The old term for the stones used in curling, given to them because boulders found in the bed of streams were usually employed for the purpose.

Chap and lie—To drive a stone placed on the tee outside of the 7-ft. circle, but to remain within it oneself, and if possible within the 4-ft. circle. [*See* DIAGRAM OF RINK].

Chipping—Striking a stone, of which only a small part can be seen upon the exposed portion. Especially in the phrase "Chipping the winner."

Chuckle—To pass through a narrow opening between two stones, and then by a series of wicks from other stones, to reach the destination.

Coal score—[*See* HOG-SCORE].

Cockee—[*See* TEE].

Coiting—The earlier form of curling when the stones were without handles, and more nearly resembled "quoits," from which the word is probably derived. The term is still used for curling in Ayrshire. Also spelt **Kuting**.

Coll or Colly—[*See* HOG-SCORE].

Core—Old term for Rink (2) (*q.v.*)

Cowe or Kowe—A besom made of broom twigs.

[1] Secretary, D. Foulis 260 West 115th St., New York.

[2] Secretary, J. P. Robertson, 208 Edmonton Place, Winnipeg, Manitoba.

with which the ice is swept in front of an advancing stone if it appears to be going too slowly.

Crampit—Originally a plate of iron shod with nails, fastened to the boot-sole, now a plate fastened in the ice, upon which each player has to take up his position before delivering the stones.

Dam—A sheet of water confined for curling purposes.

Doupar—[*See* SKIP].

Draw—To play a stone up gently.

Drive—To deliver a stone with extra force in order to dislodge a winner or a guard, and drive it out of the house.

Driver—[*See* SKIP].

Drug ice—Soft or dull ice, on which the stones run heavily.

Dry—A seam running through a stone, and rendering it liable to break.

Edge in—To rub one stone gently upon another, so as to assist it slightly in changing its course.

End—[*See* HEAD].

Ettle—To aim at.

Fill the ice or port—To play a stone so as to block an opening which lay between two other stones, and thereby to guard a position previously obtained.

Fit the tee—To set the foot fairly upon the heel of the fixed crampit (*q.v.*) before delivering the stone.

Flee the ice—To deliver a stone in such a direction or with such force that it goes off the rink (*q.v.*) altogether.

Fore Han'—The player first in order on the side.

Gogsee—[*See* TEE].

Grannie's wing, to get under—To go from a stone lying in the way at an angle, and shelter behind another.

Guard—(1) A stone that lies in a direct line before another.

(2) As verb; to play such a stone.

Hack or Hatch—A hollow cut in the ice 4 yds. behind the tee, in which the player puts his foot to prevent it from slipping. An ancient plan still followed in some clubs in preference to the *Crampit* (*q.v.*)

Hair o' pith—*Lit.* "a trifle of extra force."

Handle—[*See* STONE].

Hands up—The command of the Skip (*q.v.*) to stop sweeping.

Harried—A side is said to be "harried" when, owing to the condition of the ice, they are unable to send their stones up to the tee.

Hatch—[*See* HACK].

Head—The portion of the game in which all the players have delivered their stones, and have counted the winning shot or shots.

Hin' Han'—The last player on a side, who also acts as *Skip*.

Hog—A stone which after delivery fails to pass the *Hog-score*.

Hog score—A line drawn across the ice at a distance from the tee of one-sixth the length of the rink. Stones which do not cross it must be removed from the game. A wavy line is usually drawn over the same, in order to distinguish it from a crack.

House—[*See* BOARDHEAD].

Howe—The middle of the rink, which is hollowed by the passage of the stones.

Inringing—[*See* INWICKING].

In-turn—A twist given to the stone, which causes it to describe a curve to the right.

Inwicking—A stroke which reaches the tee, or object stone, by rebounding from the inside edge of another stone lying to the side. Also as verb. Also called **Inring** and **Wick**.

Kittle—(1) Adjective; of a shot, difficult.

(2) Vb. To work keenly, especially at sweeping.

Kowe—[*See* COWE].

Kuting—[*See* COITING].

Lie shot—Of a stone, to come and rest nearest the tee.

Mar—To disturb a stone while running, by accident or otherwise. If by one of the player's own side, the stone must be removed; if by an opponent, the stone must be placed to the satisfaction of the opposing captain.

Out-turn—A twist given to the stone on delivery, which causes it to describe a curve to the left.

Outwick—A stroke which hits a stone upon the outer edge and drives it towards the centre. Also as verb.

Parish—[*See* BOARDHEAD].

Patlid—A stone that comes to rest exactly upon the tee.

Piltycock—The original form of curling-stone, and really a large stone quoit, with depressions for fingers and thumb. Also called **Kuting-stone**.

Point Game—A variety of curling, in which each player tries in turn certain assigned shots, receiving marks in the measure of his success. The eight shots are: (1) Striking; (2) Inwicking; (3) Drawing; (4) Guarding; (5) Chap and Lie; (6) Wick and Curl in; (7) Raising; (8) Chipping the winner; (9) Drawing through a Port. The tenth shot, to be played in the event of a dead-heat, is outwicking.

Port—An interval between two stones.

Raising—Driving on a partner's stone in a straight line up to or near the tee.

Rebutting—A stroke delivered with full power, in order to clear the Boardhead as far as possible on the chance that it may be some help to a desperate game.

Red the ice—To drive off the guards by a strong shot, in order to lay open the tee or winner.

Ride—To deliver a stone with such force upon another as to drive the latter from the boardhead.

Rink—(1) The members composing a side, four in number.

(2) The area on which the game is played.

Royal Caledonian Curling Club—The governing body of the sport of curling. Founded in 1838 on the suggestion of an anonymous advertiser, it at once secured the allegiance of the various curling clubs, of which, in 1897, no less than 716 acknowledge its authority.

Shot—(1) The unit of scoring, each stone nearer to the tee than any opponent counting one. (2) The delivery of a stone.

Sidelin' shot—A stone lying on each side of the tee.

Skip—The captain of a side, who gives his men elaborate advice as to the play, and controls the sweeping. Also called **Director** and **Driver**.

Sole—(1) Noun; the base of the curling-stone.

(2) Verb; to deliver the stone on the ice.

Soop—Scottish command for "sweep."

Souter—To score a love game: not to allow the opponents to score, as certain souters (shoemakers) of Lochmaken are said to have done.

Speil—[*See* BONSPEIL].

Spend the stone—To play a wasted shot.

Stone—(*a*) Consists of an iron handle and a cheese-shaped mass of hard stone.

(*b*) It must not weigh more than 44 lbs. (the usual weight is 35 lbs. to 40 lbs.), nor measure more than 36 in. in circumference, nor be less than one eighth of its circumference in height.

(*c*) Material. The most popular material is blue Ailsa Craig, but even better formations are Burnock Water and Crawfordjohn. Other well-known varieties are Crieff Black, Carsphairn, Crieff Serpentine, and Tinkernhill.

Stones are now generally made with reversible soles, so that the sole may be used which is most suited to condition of the ice.

Striking—Hitting with a stone another placed on the tee with sufficient force to drive it out of the circle.

Stug—A shot gained by accident.

Sweeping—Clearing the ice with besoms. When snow is falling, sweeping may be practised from tee to tee [*see* DIAGRAM OF RINK], but in ordinary cases only from the nearest hog-score. The player's party only are allowed to sweep, unless an opponent's stone be moved, in which case the other side may sweep in

front of that. The ice behind the tee may be swept at any time by either side. Sweeping must always be to a side, and no dust swept up may be moved forward or left in front of a running stone. [*See* Rule 16.]

Tee—A point in the ice,—the centre of the boardhead,—to lie as near as possible to which at the end of the head (*q.v.*) is the aim of each player. Also called **Tozee, Gogsee,** and **Wittyr.**

Tramp—Old name for the crampits affixed to the boots of players.

Tricker or Trigger—Pieces of iron shod with spikes, which could be fixed at any point of the ice

Fig. 8.—The Winner Goes.

behind the tee, and from which the player in old times delivered his cast.

Wick—[*See* Inwick].

Winner—The stone lying nearest to the tee at any particular moment in the game.

Wittyr—[*See* Tee].

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CYCLING—

LEARNING TO RIDE—The balance of a bicycle is maintained by turning its front wheel towards the direction in which it is falling: in actual practice, of course, the tendency to fall is counteracted rather by the rider slightly inclining his body from side to side as required; but the first and more easily acquired method is that first to be attempted by the novice. If the prospective rider has not even an inexperienced friend to help him, he should procure a strong but antiquated and valueless machine, and lowering the saddle so that he can straddle the machine, and selecting a piece of road which has a very slight downward gradient, should throw one leg over the machine, seat himself, and, following the pedals round with his feet, do his best to put the above principle into practice. He should take care to keep the machine going fast enough to secure "steering way." The difficulty will at first be considerable, but he should remember that he can always save himself by sticking out a leg. As he progresses, he will discover how very slight is the force required for steering, and how great a bias the mere inclination of the body exercises over the machine.

Should he possess a friend who will help him his task will be easier: and it is to the latter that our instructions are best addressed. The assistant should hold the machine upright by grasping the saddle springs so that the learner does not know for certain whether he is not riding by himself, and, running with the machine, give it that necessary motion which the learner is apt to minimise. Except to help in starting, he should refrain from touching the handle-bars. The novice, when he has fairly mastered the balance, should again select a slightly downhill road, and holding the handles and placing his left foot on the step, should hop on the other till the pace attained admits of his straightening his left leg and balancing himself with his other leg hanging across the back wheel, while the machine runs by its own momentum. After a little more practice he will discover that from this position he can easily and without assistance lower himself forward into the saddle, which should, as we have said above, be adjusted very low, and commence pedalling. He should next learn to dismount: this is effected by waiting till the left pedal is at its lowest and throwing the right leg over the saddle and back wheel, meanwhile retaining his grip of the handles. He will thus alight standing on the left of the machine. He will soon discover that he can dismount with the pedals in any position. The practised rider will of course, in dismounting, throw as much of his weight as possible on to the handles, so as to minimise the strain on the frame caused by throwing it all on to the pedal.

BUYING A CYCLE—It is always best to avoid second-hand cycles unless you know their history, and they bear the name of a good maker.

We shall hereafter indicate the "points" which should be looked for in a good cycle.

The safest advice to give to a novice is a reference to one of the great firms, who, if they do ask a high price, at least have a reputation to uphold. By this we mean a reputation among practical and disinterested riders, not

the proprietorship of a long list of "records" made by paid riders.

We cannot too greatly emphasise the statement that these records, the achievement of which has corrupted the whole tone of cycling as a sport, prove absolutely nothing. There is little to choose among the machines of the best makers, and the strings of records quoted in the advertisements only prove that a lot of money has, economically speaking, been wasted in the support of hired racing men.

The Dunlop and the Palmer are both good tyres: but does any one suppose that it is their speed, and not the length of purse of their makers, that can be gauged by the magnitude of their respective contributions to our list of records?

Still, in spite of what we have said, it is extremely risky for a novice to buy a cheap machine; it is better for him not to go out of the fashion, unless he does it under the guidance of an experienced friend. There are, however, a large number of local makers, who, using the excellent parts turned out by the Eadie, B.S.A., Perry, and other companies, can sometimes supply a really good and light machine at a price considerably below that of the big makers. The chief drawback to buying their machines is that, lacking the elaborate plant of the great firms—especially that for frame building—they are apt to fit their frames together untruly, and that, owing to their small capital, they cannot afford to throw aside defective work. The fact remains that some small makers can turn out uncommonly good machines.

In buying or ordering a cycle see further that it is fitted to your own personal requirements. Insist on having your frame of full height; state whether you want brake and mud-guards, and carefully specify your wishes in such details as shape of handlebars, material of handles, weight and gear of machine, throw of crank, and make of saddle and tyres. The novice will do well either to get a friend to see to these details, or, failing this, to furnish the maker or dealer with particulars as to his weight, length of reach, as well as the kind of work for which he intends the machine.

Local Agents—We strongly advise the purchase of well-known machines through local agents. It is a delusion to suppose that the casual purchaser can buy for less money on Holborn Viaduct than from a dealer in his own town. Moreover it is not well to be on terms of enmity with the local repairer.

Maker's Guarantees—The maker's guarantee usually covers all breakages (not the result of an accident) which occur within a twelvemonth. Saddle, chain and tyres are usually guaranteed by the manufacturers of those parts, who will generally make good defects.

Second-hand Machines—A second year's machine by a first-class maker, and in good condition, should be worth £10 to £14, a good machine of lower grade or less known make from £7 to £10. A fair number of good machines are advertised for sale in the cycling papers. Choose an advertisement that is business-like and to the point, *e.g.*, "1896 * * * * No. 1. Road Racer; 24 lbs. Dunlop, Carter, gear 72; 25 frame; £12": this is evidently written by a cyclist for cyclists. Avoid advertisements which descant on the beauties of the plating and enamel, and still more those headed "*Beeston Humber pattern*"—a palpable attempt to persuade the buyer that he is getting a Beeston Humber when he is not.

It now remains to inspect the machine. If the owner consent, take it home and examine it at leisure. If, as is not unreasonable, he refuse, look first at the teeth of the back chain wheel: any wear will be most apparent here. If the backward side of the teeth is deeply worn, have nothing to do with the machine.

Next test the bearings; if they will not run freely without considerable side shake and seem tight in one place and loose in another, considerable and uneven wear is indicated. Try also whether the head can be correctly adjusted. Next inspect the frame for twists, and see that the wheels "track." This is easily done if the machine is on a boarded floor; if not, judge it by the eye, or by a straight stick laid along the frame. See that the wheels are true and the tyres in good order. Make sure that the chain wheels are in line; this is best ascertained by seeing that the teeth of the chain wheels do not rub against the side links. Test the frame for rigidity as prescribed on p. 273, and keep a lookout for uneven places in the enamel that may conceal a crack.

ROAD RIDING IN GENERAL—Too many beginners are under the impression that when once they have mastered the difficulties of steering, mounting and dismounting, their cycling education is complete. How general this fallacy is can be seen by looking at three out of every four cyclists one meets, who, while sufficiently expert at controlling their machines, are entirely lacking in that finish which stamps a good rider.

Position—First of all the machine must be properly adjusted. The saddle should be raised to such a height that when the pedal is at its lowest, the foot, with the heel well dropped, rests comfortably upon it, and the knee just misses being absolutely straightened at the joint; the centre of the saddle should be about ten inches behind a vertical line drawn through the crank axle. The handles should be about level with the saddle, so that when one is sitting upright the handles can just be grasped. Many fast riders ride with a shorter reach, a more forward position, and the handles lower than this, but, for a beginner, this is by far the best position. When

the rider is reasonably expert he will discover for himself the position in which he can ride best; it is a great mistake to imagine that the same position must necessarily suit all cyclists.

Ankle Action—The great thing in cycling is to attain to an effective use of the ankles; if these be kept stiff, the power of each foot can only be exerted through a comparatively small arc of the circle described by the pedals. When the cranks are vertical the rider will find that there is a "dead point," at which he can exert no power whatever, and the impetus of the machine is alone carrying him on. To overcome this dead point is the aim of ankle action.

If the ankle be relaxed, it will be found quite possible so to incline the foot to the leg, that power may be exerted before this dead point with the rising pedal, and after it with the descending one, and the gain in efficiency is tremendous.

To this end the ball of the foot should rest upon the pedal: at the commencement of each stroke, before the pedal reaches the vertical, the heel should be dropped, and pressure at once applied to the pedal by a kind of clawing action; during the down-stroke the heel will naturally rise relatively to the rest of the foot, till when the pedal is at its lowest the heel is uppermost; a further clawing action will bring the pedal past this point till it is again well on the ascent; the foot should then be lightly lifted, without of course leaving the pedal, but so as not to impede its upward course, till just before a fresh revolution is commenced the heel is again dropped, and the process begun afresh.

With good ankle action much of the work is taken by the calf muscles, which will be largely developed, especially on the side and towards the front of the leg. Pulling at the handles will be almost entirely obviated when the going is easy, and minimised when it is heavy. The practised ankler will, for road riding at all events, be able to dispense with the uncomfortable "toe-clip." This contrivance, necessary for the safety of the racing man, is to be eschewed by the novice, as it militates against the attainment of a good action. Its later adoption is a matter of individual taste.

In riding, the body should be kept absolutely at rest; fidgeting and wriggling in the saddle, and any movement of the shoulders, should be especially avoided.

As he progresses, the rider will discover that steering is effected not so much by the hands as by a gentle inclination of the body; this he will pick up automatically as he grows in proficiency, and to this end he should practise riding "hands off," not as an end in itself (nothing looks worse than cheap "showing off" of this kind), but to perfect his steering.

Nursing the Machine—In no case is the difference between a good and bad rider more observable than on a rough road. In surmounting an obstacle a practised rider will not allow his weight to descend heavily on the springs of the saddle, but will minimise it by momentarily shifting some of it to the handle bars and pedals, thus distributing the shock over the whole machine.

Mounting—Very few light machines are fitted with steps. Mounting on such machines is effected by placing one of the pedals (usually the right) slightly in advance of the vertical, and, standing if possible on higher ground than the machine, *e.g.*, on the "crown" of the road, or best of all, on a friendly kerbstone, by throwing one leg over the saddle so as to rest on the pedal, then with one movement applying the pressure to the pedal, and sliding into the seat. This mount is at first difficult in crowded streets, and riders who do much traffic riding should certainly use a step, but it puts less strain on the machine than any other method.

Dismounting—Several kinds of dismount should be practised, as in crowded traffic there may not be room for any one given variety. Practise the pedal dismount on either side. A very useful way of getting off is to shoot back over the saddle, and alight straddling the back wheel; or more simple still, merely to remove one foot from the pedal and, as it were, step back out of the saddle. This method strains the machine least of all. Before trying these last two methods, make sure that you can straddle the back wheel with safety, and do not diminish your length of leg by bending the knees.

Sideslip—On greasy roads the wheels have a tendency to slip from under the rider: a certain amount of slip in the back wheel is immaterial, but when the front wheel slips the whole machine generally goes over. Corrugated tyres minimise this danger to some extent: but the best safeguard lies with the rider. "Funk" and nervousness are fatal. Keep on the "crown" of the road, sit still in the saddle, ride at an easy pace, pedal lightly and carefully, and avoid back pedalling; hold the handles lightly and give the machine its head; if it is necessary to turn, do so gradually; be prepared to save yourself if the machine really goes, but don't jump off wildly because you feel a twitch from the back wheel. Tramlines should be crossed as nearly as possible at a right angle.

Descending Hills—None but an expert rider should ride without a brake, but such an appliance should only be used in the last resort; it ruins the tyres, and, if applied to the front wheel, puts a great strain on the front forks, and promotes sideslip. Moreover, if the brake from any cause refuses to act, the rider is put more at the mercy of Providence than is usually deemed advisable. Therefore learn to check the machine by back pedalling. Pressure is applied by the feet to the rising pedal, using the ankles in exactly the opposite way to that advised for forward-pedalling. If you find that

despite all your efforts you are being forced out of the seat, hold yourself down in the saddle by one hand. Do not back-pedal too suddenly, or you may break your chain.

Brakeless riders may improvise an excellent brake by applying the sole of the foot placed crosswise to the front tyre immediately behind the fork crown. If mudguards be carried, this must be done in front of the crown, but it is less effective.

Hill Climbing differs only in degree from ordinary riding; and in this direction good ankle action will be found indispensable. Purchase is gained by pulling at the handle-bars, not in jerks, but steadily. The best results are obtained by leaning forward over the handle-bars, but on a long hill a change of position is beneficial, and the rider may lean backwards, pulling steadily the while. Riding through deep mud and against a head wind come under the same category as hill climbing, but in the latter case it is absolutely necessary to lean forward in order to diminish the surface presented to the wind.

Gearing—The question of gearing from a mechanical point of view is discussed on p. 274. We need hardly explain that the higher the gear, the further the machine travels at each stroke of the pedals, and the greater is the force needed at each stroke to drive the machine. From this it will be apparent that for hilly country a very high gear is inadvisable; there is a limit to the amount of power which any rider can put into a stroke (*e.g.*, a machine geared to 1,000 could not be driven at all), and as one approaches this limit, the effect of the heavy work is very tiring. This is especially noticeable in hill climbing. The power required for each stroke is greater than on the level, so that a gear which might easily be propelled along a flat road, might become unrideable on a steep hill. Assuming that the high-gear machine succeeded in getting up, although the *total* power expended by its rider would, if measured in foot-pounds, be the same as that put forth by a low-geared rider, yet, by the near approach at each stroke to the extreme limit of his strength, the big-gear man would soon be exhausted, while his low-geared companion, pedalling faster, but always well within his strength, would be comparatively fresh.

Again, a heavy machine is harder to drive up hill, so that a heavy machine necessitates a comparatively low gear, while a light machine may be fitted with a higher one. On the other hand, below a certain point, additional ease of driving becomes inappreciable on a level road, while the foot has to be lifted in preparation for the stroke very much oftener; as this lifting the foot is all power wasted, an unduly low gear exhausts the rider without giving any compensating advantage. Therefore, shun too low gears equally with excessively high ones.

Speaking generally, powerful riders will ride high gears, and light active pedallers low gears, but it is by no means always true. There is no doubt, however, that the development of the muscles caused by practice enables an expert to use with advantage a gear far too high for a novice. Let the novice of ordinary strength, therefore, riding a machine which "stripped" weighs, say, 27lbs., confine himself within the limits of 60 to 63 (for ladies 6 inches lower). As he increases in skill and strength, he will find for himself what gear best suits him. We may add however for road-racing machines 68 to 76 is considered a medium, and anything over this a high gear.

Variable gears (See p. 276)—A good gear of this kind will be found valuable in a hilly district or for winter riding. It should, however, be remembered that *fast* riding uphill on a low gear is often as tiring as on a high one, hence, when the lower gear is switched on, the rider should be content to pedal no faster than with the higher.

Throw of cranks (See p. 274)—A long crank throw increases leverage, but necessitates the moving of the feet through a larger circle than a small crank, *i.e.*, it sacrifices speed for power. The normal crank throw is 6½ inches, and for ladies 6 inches. A long-legged rider may, however, beneficially increase his throw up to 7 inches. (Much above this is a mistake.) A short-legged one may go as low as 6 inches. An increase in throw may with advantage be coupled with an increase in gear, or *vice versa*. It is however inadvisable for a rider to change the throw of his cranks: having once found the right throw he should keep to it.

Pedals—Should be wide enough to take ordinary walking shoes if necessary. The use of rubber or rat-trap pedals is a matter of individual taste.

Handle bars—For average road riding we prefer flat handlebars well brought back, inclined at right angles to the head. For very fast work they are usually "dropped" or bent downwards. The meaningless upcurved handlebars that have recently come into use among beginners should be avoided; a flat handlebar may be raised to any desired position, and we need hardly say that unnecessary curves in tubing detract from its strength.

Cycling Dress—The best material for cycling garments of every kind is wool—wool throughout. For casual riding there is perhaps no very great risk in riding in a canvas shirt, but if there is any prospect of getting hot, the danger of catching cold is considerable. Woollen garments permit of the ready escape by vaporisation of the perspiration, and, being non-conductors of heat, keep the air within them at an even temperature; cotton, on the other hand, retains all moisture, and hangs, wet and chilly, on the body; being a ready conductor of heat, it at once exposes the wearer to all changes in the

temperature of the air, besides permanently retaining perspiration in an unpleasant manner.

Firstly of underclothing. In summer a flannel shirt, preferably with a detachable flannel collar, is enough for any one. In winter this should be supplemented by a woollen vest and short drawers; omission of the latter in frosty weather tends to produce chaps and soreness.

The shape of cycling garments is mostly a matter of taste: for ourselves we prefer Norfolk jackets, which having no particular shape to lose may be suffered to lose it. No coat used for really hard cycling will retain its shape.

Numerous pockets are indispensable; the fit should be easy; the sleeves should not be too long; and it should always be possible to turn up the collar and button it closely over the throat. Waistcoats are a mistake; in cold weather sweaters and cardigans are preferable.

Knickerbockers should be fairly full, and may be made either with buttons or straps; if box-cloth "continuations" are worn, they should be wool lined. Knickerbockers should have a "hip pocket" to hold one's purse, as carrying anything in the ordinary side pockets when cycling is uncomfortable; the pocket is moreover liable to disgorge its contents. Cycling knickerbockers should all be double-seated *outside*; this requires an experienced cycling tailor, as, if it be unskilfully done, the seat rucks up into agonising wrinkles.

Stockings may either be worn short and secured by the buckle of the knickerbockers, or may be long enough to fold over, in which case the end of the breeches is secured to the leg itself and the stocking folded over it. Tight garters are to be avoided; the best are plain bands of broad elastic. A wool-lined cloth cap is the best all round head gear: in summer a felt "tennis hat" is even better.

Shoes should be of the orthodox cycling pattern: viz. rounded at the toes, flexible at the "waist," and with very low heels. The laces should be fastened by hooks all the way down and not by eyelet holes. In dry weather the variety which is attached by an ankle strap will be found satisfactory.

Many riders have the soles "clumped" and cut with slits for the reception of the plates of rat-trap pedals. Bars on the shoes are most uncomfortable for walking purposes.

THE RULE OF THE ROAD—The British rule of the road, which is the reverse of that obtaining in all countries except, we believe, in Bohemia, is to keep to the left or 'near' side when meeting traffic, and to keep to the right or 'off' side when overtaking it. To this rule there are two general exceptions: in overtaking trams it is usual to keep to the left, and in passing a led horse in either direction it is customary to keep to the side of the man leading it. Moreover a driver who is keeping to the left has prior rights to one who, in overtaking other traffic, is keeping to the right: the latter must fall back till the former has got through.

When two or more cyclists are riding together and meet a vehicle, or are overtaken by one, they should form single file, the rider on the off side falling behind the one on the near side. In overtaking traffic this procedure is reversed. If riding with a lady, however, the gentleman, who should be on her off side, should in all cases quicken his pace and take the lead, unless, of course, she expresses a wish to the contrary.

Special Laws affecting Cyclists—Cycles are carriages within the meaning of the Highway Acts, and are required to conform with its enactments, with the following additional provisions: (1) That between one hour after sunset and one hour before sunrise they must carry lighted lamps; (2) that in *overtaking* traffic they must "give audible notice of their approach by bell, whistle or otherwise." Without discussing the vexed meaning of the last word, we strongly advise all cyclists to carry loud-ringing bells. We need hardly add that cycles, in common with all carriages, are under all circumstances prohibited from using the footpath.

CYCLE TOURING—**Preparations for a Tour**—The first step to be taken by the prospective tourist is to join the Cyclists' Touring Club, which will furnish him with road books to nearly any civilised country, will equip him with all that he can desire in the way of garments, will defend him from the extortions of the innkeeper and the *douanier*, and generally keep a watchful eye on his well-being.

Do not start on a tour unless you are in good health and fair riding condition, which is soon attained by a few preliminary spins. Thoroughly overhaul your machine before starting; clean out the bearings with paraffin and carefully adjust and oil them. See that your frame and wheels are true, the spokes taut, and the brake fittings in order. Above all things do not start with a defective tyre; if the jacket show any signs of disintegration, buy a new one at once and use up the old one in subsequent home riding. A bad tyre is an intolerable nuisance on a tour. We need hardly add that it is inexpedient to tour on a new and untried machine, and most of all on a new saddle.

It is as well roughly to map out your itinerary before starting, especially with a view to the forwarding of parcels of linen, to be picked up on the way. The splendid road books of the C.T.C., or the humbler work of Mr. Spurrier (very accurate so far as it goes), will be found of service. It is as well to make an abstract of these and of the C.T.C. hotels in a note-book, to avoid carrying the actual volume.

Dress and Luggage—Touring attire should follow the rules for ordinary riding dress, and

no aberrations from the standard of all-wool clothing should be tolerated. In the way of foot-gear, stouter shoes than usual should be worn: the ordinary light cycling shoe, though good for its purpose, offers feeble resistance to wet and mud, and will go to pieces if much walking is done. Spats are uncomfortable, but indispensable in muddy weather. They should be as thin as possible.

A light waterproof cape should never be omitted. The quantity of extra clothing carried on the cycle should be cut down to Spartan limits; a heavy kit turns a pleasure into a toil. It is, however, not necessary to carry more underclothing than will suffice for two or three days, as fresh supplies can be sent to inns, post-offices and railway stations *en route*. We prefer the last; the first ties one down to sleep or eat in the house, which the hour of one's visit may render inconvenient, and post-offices keep shorter hours than railway parcel offices, the larger of which are nearly always open.

The irreducible minimum would seem to consist of two spare flannel shirts for evening and night wear (the former may afterwards be promoted to active service), one or two spare collars (say one flannel and one linen), two or three handkerchiefs, a toothbrush and a comb. Spare stockings, a hair brush, and shaving tackle come on the "margin of utility." The luxurious traveller who is contented to cumber himself may add to this list as his fancy dictates. Good soap, we may say, carried in a tin box or in a tobacco pouch, is conducive to comfort.

It is often our practice to stay several days at one place, and take long daily trips round about it: a complete change of clothes can then be kept at the inn, and afterwards forwarded to the next stopping place. This obviates the necessity of carrying any luggage on the machine. In any case, for very long tours, a complete change of clothes should be sent on by rail: after three weeks' constant use, any suit will stand in need of a thorough cleaning.

How to Pack the Luggage—A simple outfit may be packed in a large sheet of American cloth, rolled into a sausage-like parcel, and strapped upon handle-bar carriers; to omit these is a mistake, as the handle-bars alone do not afford a firm enough hold to avoid shifting and consequent friction, and the American cloth will rapidly be worn into holes. Large parcels should be carried on a "gridiron" carrier, such as the Cycloe, clamped to the head socket. Further parcels may be carried behind the saddle in place of the tool-bag, which may be strapped to the handle-bars or the top tube. Valises which fit into the "diamond" of the frame are to be avoided, as in these days of narrow treads they hamper the knees of the rider.

Tools—A larger assortment of tools should be carried when touring than when engaged in ordinary riding. In addition to the usual outfit of pump, spanners, oil-can and repair tackle, the following articles should be taken:—

A yard of stout copper wire in a hank; combined pliers and wire-cutters; screw-driver; spare nuts and washers; some strong whipcord; sheet rubber; extra large tube of solution; large piece of repairing canvas.

En route—Do not degenerate into a "mile-hunter"; remember that you are not a professional tourist and are not bound even in honour to get anywhere in particular. Riding too far or too fast leads to "fatigue fever" and sleeplessness. The best rule is not to ride at all after dinner. Over exertion in hill climbing is to be avoided. One may, when touring, walk unashamed up even moderate gradients.

We take this opportunity of protesting against the habitual use of coca and similar stimulants when riding; we have good medical authority for stating that they afford no real sustenance, and that their use, unless very occasional, is decidedly harmful. Chocolate, raisins, bananas, or meat lozenges are far preferable.

Maps should be mounted on linen; four miles to the inch is the handiest scale: use such as disregard county boundaries: "county maps" are an unspeakable nuisance, as well as being usually on different scales to each other. We always use Bartholomew's, which fulfil all these conditions, and can always be had at Smith's bookstalls.

Cost of Touring—Upon this point no hard and fast statement can be made: the cost will largely depend on the taste and means of the tourist: it is possible to tour comfortably on about ten shillings a day under the C.T.C. tariffs; generally speaking it will be found less expensive to avoid spending the night in large towns, where hotels are usually either expensive or uncomfortable, and to put up in the smaller market towns, in which the C.T.C. will usually possess the best hotel.

For those of narrower means the C.T.C. has appointed a cheaper class of houses, often very good, as well as Temperance Hotels, which are usually not under contract. But very often, especially in out-of-the-way places, excellent accommodation can be obtained at small village inns; it needs, however, a practised eye to pick out good ones; one may fare on an excellent supper and breakfast, and sleep between lavender-scented sheets for some three or four shillings, or one may eat rancid bacon off a dirty table-cloth among fumes of stale beer and bad tobacco, at the price of good hotel accommodation.

Continental Touring—The C.T.C. ticket will get your machine duty free into most countries; that body is also negotiating for reciprocity of membership with the Touring Club de France, the Deutsche Rädfahrerbund, and other foreign touring Clubs.

We can only offer brief and general advice;

for details the tourist should apply beforehand to the C.T.C. foreign Chief Consul.

More luggage should be taken than for home touring: in France the railway arrangements for parcels are good, but elsewhere the cyclist will do well to rely on himself. Most people nowadays know French well enough to get about: a pocket English-French-German Dictionary is very handy: it is useful to jot on the flyleaf the foreign equivalents for the principal parts of the bicycle.

CYCLING INSTITUTIONS — **The Cyclists' Touring Club** (Sec., E. R. Shipton, 47, Victoria Street, S.W. Subscription 5s. a year; 1s. entrance fee) was founded in 1878. It now possesses about 40,000 members, and is rapidly increasing. Its advantages include:—A system of excellent hotels of varying grades, which are found in nearly every town, and at which a discount may be obtained; to prevent misrepresentation the tariff is printed in the Club Handbook; a system of approved cycle repairers, and of official tailors who supply at a fixed tariff the excellent cycling garments approved by the Club; a unique organisation of local chief Consuls and Consuls, who will furnish, on personal or written application, information of every kind; the admission of members' machines duty free into most civilised countries; a monthly gazette, the most valuable to the general cyclist of all the cycling papers; a splendid series of British and foreign road books, the former incomparably superior to anything previously issued. The C.T.C. has also taken a leading part in asserting the rights of cyclists, and is always prepared to render assistance, legal and otherwise, in approved cases: it has also erected numerous danger-boards on steep hills, and has done much to keep road surveyors up to a sense of their duties. These latter objects are also the care of the N.C.U. (see below). A recent development of the C.T.C. has been the formation of district associations among local members for mutual intercourse; membership of these is, of course, purely optional. The C.T.C. is governed by a council, part of which, the representative councillors, are elected by postal vote of the Club, the remainder, the chief consuls, by co-optation.

The National Cyclists' Union (Sec., S. R. Noble, 57, Basinghall Street, E.C. Subscription, for clubs 10s. 6*d*. per twenty-five members; for private members 2s. 6d.) is the governing body of the sport of cycle racing, and, like the C.T.C., keeps watch over the rights of cyclists, and interests itself in the condition of highways and erects danger-boards. In this way there is much needless duplication of work and jealous competition between the two bodies: we look forward to seeing all matters affecting the public rights of cyclists dealt with by a joint board of both Associations.

The units of the N.C.U. are the clubs; these are divided into autonomous local centres, to which they return delegates; the centres, each according to its size, return delegates to a supreme federal body—the council. This appoints a general committee which deals with current business.

The Roads Improvement Association (Hon. Sec., R. Dudley Ward, 57, Basinghall Street), which has done excellent work in spreading among surveyors the true principles of road construction, is an offshoot of the C.T.C. and the N.C.U.

Cycling Clubs—The oldest English Club is the Amateur B.C. (chiefly a University club) which was informally founded in 1869, though the Pickwick B.C. (1871) was the first to start regular minutes. The Edinburgh Amateur B.C. dates from 1870, and the Surrey B.C. from 1871. The Oxford University Bi.C. was launched in 1873, the Cambridge University Bi.C. and the London B.C. (which is largely recruited from the Universities) in 1874. Dublin did not follow till 1877. The famous Stanley C.C., which organises the Stanley Cycle Show, counts from 1876, and the next year saw the formation of the Brixton B.C. Of the more modern organisations the North Road and Bath Road clubs were founded for road-racing, but still continue to flourish. Large and vigorous metropolitan clubs, largely devoted to path-racing, are the United Hospitals, London County, Catford, Polytechnic, Anerley, and Silverdale. Of country clubs, the Anfield B.C., 1879 (Liverpool), and the Speedwell B.C., 1876 (Birmingham), are famous in history.

Cycle Shows—The Stanley Show, which is managed by the Stanley C.C., dates from 1877, and till 1892 held the field undisputed; in that year was started the National Show, organised by a trade body. At one or other of these two shows, which are held independently in November and December, are exhibited the standard machines of all makers of any note as well as all the novelties intended for the coming season. The country towns have in many cases now formed shows of their own.

DETAILS OF THE MACHINE.

The modern rear driving bicycle consists of two wheels placed tandem-wise, and mounted in a frame of steel tubing, which carries the saddle and driving gear, and is hinged in front to permit of the front or steering wheel turning freely from side to side. The frame thus falls into two rigid portions—the "Front Frame," which carries the steering wheel; and the "Rear Frame," which carries the saddle, gear, and driving wheel. In Fig. 1 the names of the principal parts of the machine are given and distinguished by letters.

The Frame is made of steel tubes, inserted at their points of junction into hollow stampings or castings of metal, known as "lugs," and held there by brazing, and internally reinforced at these points by short pieces of tapered or serrated tube, known as liners.

The modern frame owes its strength to the fact that it

virtually consists of two triangles—the most rigid form that can be given to a frame of any kind. One of these has the back fork ends and the crank bracket for its lower corners, and the saddle at its apex, and thus bears the weight of the rider; the second has at its angles the seat lug, the crank bracket, and (theoretically) the point of junction of the upper and lower backbones with the steering socket. In practice, however, it is advisable to give greater length to the head or steering socket than would be possible with the above arrangement. Hence the front triangle of the frame becomes a quadrilateral, and the entire frame pentagonal. It would of course be possible to extend this principle of triangulation by joining the seat lug to the bottom of the head, and, in frames of over twenty-seven inches diagonal, the whippiness of the long tubes renders this advisable; in small frames it is not worth its weight.

The members of the frame are described in detail beneath the annexed illustration, but we offer the following general remarks.

The prevalent fashion of making the upper backbone at all costs horizontal is unfortunate: the length of the head should never be less than eight inches, and when

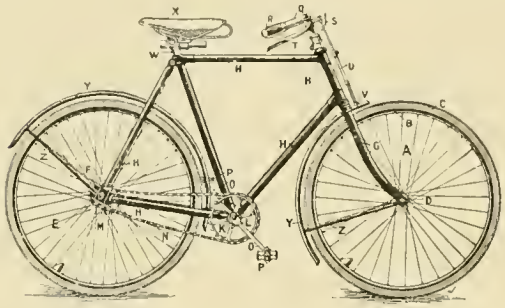


Fig. 1—The Modern Bicycle.

A, front or steering wheel; B, front rim; C, front tyre; D, front hub; E, rear or driving wheel; F, rear hub; G, front forks (the only visible portion of front frame); H, rear frame; K, crank bracket; L, front chain wheel; M, back chain wheel; N, chain; O, crank; P, pedals; Q, handle bars; R, handles; S, lamp bracket; T, brake lever; U, brake rod; V, brake spoon; W, seat pillar; X, saddle; Y, mud-guards; Z, mud-guard stays. The names of such parts as are not lettered in the above block are given under subsequent illustrations.

the short reach of the rider necessitates a short diagonal, the effect of keeping the upper backbone horizontal is to trench on the length of the head, and so injure the steering.

Three deviations from the general pattern deserve note—the Referee triple head, which is immensely strong; the Raleigh fork crown (shewn in Fig. 14), which appears to be no weaker than the usual type, and does not serve as a trap for mud and dust; and the Elswick lower backbone. This is duplicated, the two members being crossed as in Fig. 4 (6); the arrangement gives great stability to the crank bracket.

The chain stays are perhaps the most difficult part of the machine to design satisfactorily: they, especially the stay on the chain side, have to withstand the whole driving strain of the gear: the pull of the back wheel forward will, if the stays be weak, crample them or at least force them out of line (*see* page 274). The stays, therefore, have to be designed to resist this compressing strain, as well as the twisting strain on the crank bracket caused by pedalling. They should theoretically run straight from the very end of the crank bracket to the ends of the back wheel axle: but the necessity of securing clearance for the cranks without unduly increasing the "tread," or width apart of the pedals renders it necessary to bend them: they should always be bridged

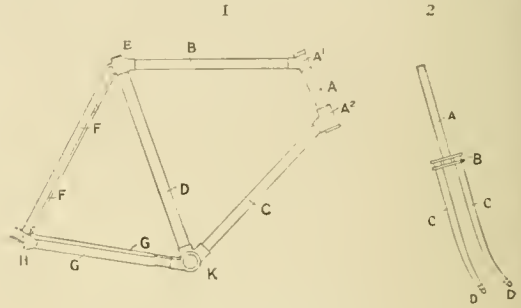


Fig. 2—The Frame.

1. *The Rear Frame.*—A, the head socket, described under Fig. 5. A1, the upper head lug. A2, the lower head lug. B, the upper backbone. C, the lower backbone. D, the diagonal. E, the seat lug. This is split, the two tips being forced together by a bolt so as to grip the seat pillar. F, the back stays (sometimes called the back forks): these are usually merely bolted to the seat lug by the bolt which secures the seat pillar: occasionally however they are brazed to the seat lug which is shaped accordingly. They should be connected by a strut above the back wheel. At their lower end they are often brazed into the back fork end, but are with equal frequency pierced for the reception of the axle, and are secured to the back fork ends by the fork end nuts. Stays which are thus secured by bolts at each end are called "swinging back stays." They are often made of D section or oval tubing to give increased clearance to the wheel. G, the chain stays or compression stays (sometimes known as the back forks) are brazed to the back fork ends and to the crank bracket: their importance is explained in the text. Like the above they are often made of D section or oval tubing. H, the back fork ends: these are solid and out of them is cut a slot broad enough to admit of the axle (which is secured to them by nuts and washers), and long enough to admit of sliding it backwards or forwards for the adjustment of the chain (see Fig. 8). K, the crank bracket is a shell of metal containing the crank bearings, the cups of which screw into it; its shape will be understood from Fig. 12; to it are brazed the lower backbone, diagonal, and chain stays.

2. *The Front Frame.*—A, inner Head-tube: this swings upon ball-bearings inside the head socket. It passes through and is brazed to the crown-plates. Fixed to it just above where it emerges from the crown is the lower half ball-race of the head (see Fig. 5). Its upper end is split and has an external screw thread, the object of which is explained under Fig. 5. B, the fork crown: this type, which is almost universal, is known as the double fork crown, from the doubling of the horizontal crown plates. In multicycles these are often triple. C, the front forks; these are tubular and usually flattened at the sides; D, the front fork ends are solid, and pierced for the reception of the axle.

across close to the bend. A somewhat better design is given in Fig. 3, where the bending of the stays is avoided.

Height of Frame is measured from the top of the seat lug to the centre of the brake axle. The seat pillar should never project more than two inches from the seat lug: nothing puts a more unfair strain on a machine than to subject it to the leverage of the weight of the rider at the end of a long stretch of saddle-pillar. Hence a tall rider will require a frame of from twenty-seven to as much as thirty inches.

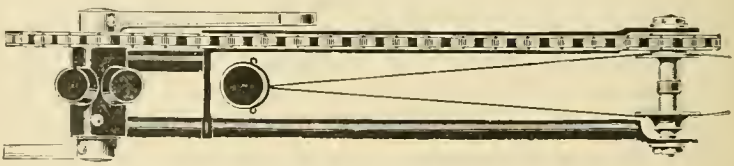


Fig. 3—Chain Stays (Referee).

Weight of Machine is best considered in connection with its most important constituent, the frame. It must be remembered that a cycle must be built strong enough not merely to sustain the weight of the rider, but also to withstand the strain of driving. A machine may answer

the former end, yet may be so light (or have its weight so badly distributed) that the frame is twisted out of line at each stroke of the pedals; not only is much force wasted through this undue elasticity, but the chain wheels may be set out of line and much friction of the chain result. Such a machine may run tolerably when the work is easy, but uphill, against the wind, or at high speed, it will be much inferior to a heavier, but more rigid, machine.

To test the rigidity of the frame in this respect, set the machine up, hold it firmly, and press with the foot on the downward pedal: the machine will in any case "give," but a little experience and comparison with a cycle known to be rigid will soon show the amount of spring legitimately to be expected. An unduly "whippy" machine should be let alone. A heavy rider will require a heavier machine than a lightweight, especially if he be also tall and require a high frame: the greater length of the tubes admits of more "give" than in a small frame, and the weight should be *more* than proportionately increased.

Speaking generally, we should say that an experienced rider of about 11 stone, who understands pedalling, may on ordinary roads ride a machine weighing, with road racing tyres and saddle, and without brake, mudguards, gear case, &c., 24 lbs.: light roadster tyres will add about 1½ lbs., a roadster saddle about 1 lb., a gear case 2 lbs., and brake and light mudguards over 2 lbs. more: a machine weighing with these accessories 33 lbs. is heavy enough for anyone up to about 14 stone: 36 lbs. ought to suffice even a very heavy weight.

The Frame of Ladies' Bicycles—As the great majority of the weaker sex continue to ride in skirts, the upper backbone has therefore to be moved downward sufficiently to give clearance for the skirts, and

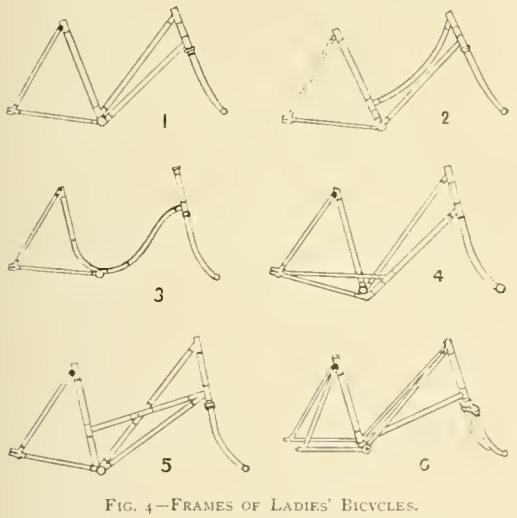


FIG. 4—FRAMES OF LADIES' BICYCLES.

this is done by carrying it (in either a straight or a curved form) from the top of the head to a point above the crank bracket, so that we get a frame like that shown in Fig. 4, Nos. 1 and 2.

It will be seen that while the crank bracket is strengthened in the same way as in a man's machine, the rigidity of the frame, due to its triangulation from fixed points, is entirely done away with. The diagonal, upper backbone, and head tube form a V or U, open at the top, which, when the front wheel is checked by any obstacle, tends to close up, thus putting a shearing strain on the junctions of the two backbones with the diagonal. Hence a curved upper backbone (see No. 2) is perhaps *slightly* preferable to a frame like No. 1, as towards its lower end it travels in an approximately horizontal line, and furthermore by its comparative elasticity tends to minimise the shocks received from the front wheel. A single tube frame like No. 3 is beneath serious notice.

Stronger and altogether better frames are No 4, designed by Mr. C. W. Brown, the only drawback of which is its weight, and Nos. 5 and 6, made by the Raleigh and Elswick, respectively.

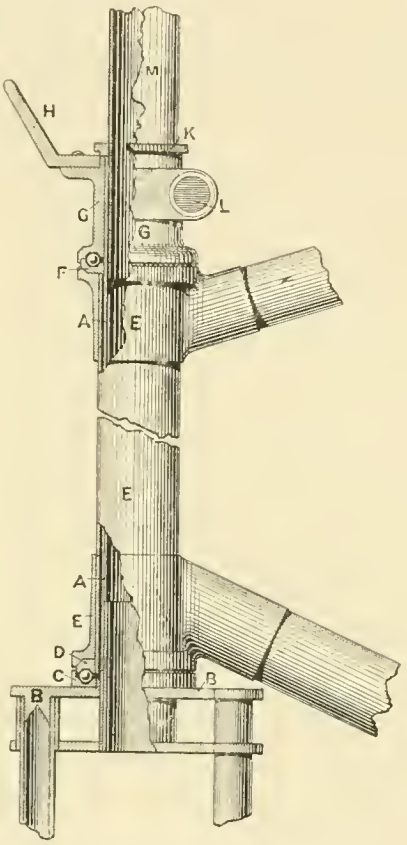


FIG. 5—THE HEAD (ENFIELD).

To put together—A is the inner steering tube; round it, just where it emerges from the fork crown B, is fixed the lower half of a ball race C; the balls are placed in position, and the complementary upper half D dropped upon them; the steering socket E is slipped over A and lowered on to D; into its upper end and round A is placed the lower half F of the upper bearing; the balls are placed therein, and the clip G, in which is incorporated the upper half-bearing, is dropped on to them; a milled or hexagonal ring K is then screwed over the inner steering tube and down on to the clip G so as to obviate any vertical play (in the Humber and most other machines, the lamp-bracket is first slipped over the tube and gripped between K and G. The variety shown above (H) is secured to G by a screw); the lower end of the handlebar M is slipped through K and G well into the steering tube A (at least an inch further than shown above); and, finally, the bolt at L is screwed up, thus compressing the clip G on to the steering post; this is itself split at its upper end, and so grips the handlebar tube; the entire arrangement is thus securely locked. Note.—In many machines the half-bearings D and F are permanently fixed into the ends of A.

To adjust the Head—Slack the bolt L and tighten or loosen K till the required adjustment is obtained. This is ascertained by grasping the handles, and pulling up and down on them, when any shake in the head will be felt (notice, however, that this is not due to the front wheel bearing). The head is correctly adjusted when it swings with perfect freedom, and there is no shake. If the head be unevenly worn a compromise must be effected, very slightly on the side of tightness. Such uneven wear is the result of neglecting the adjustment. Finally, again tighten the bolt L.

To raise or lower the Handlebars—Slack the nut of the screwed bolt L, adjust the handlebars as desired, always leaving at least a clear inch and a half remaining in the head tube to give a safe hold. See that the handlebars, clips, and lamp-bracket (if secured in this way) are quite straight, and tighten the bolt L.

The Head—The head of a bicycle is the hinge where the upright tube of the front portion of the frame, which rigidly connects the handlebar with the front wheel,

swings on ball bearings inside the socket formed by the front tube of the rear frame.

The head should not be less than 8 inches long, measured from the top and bottom of its two end lugs. Its construction and adjustment are described under Fig. 5.

Steering Locks are valuable not only as securities against thieves, but for preventing the machine from moving when resting against a wall. Many machines have a detachable key, but this is a nuisance.

The Handlebars—The adjustment of the handlebars will be understood from Fig. 5 and their shape from

FIG. 6—TYPES OF HANDLEBARS.

1. Flat; 2. Raised; 3. Dropped; 4. Dropped and forward.

Fig. 6. Considerations on the respective merits of these patterns will be found on page 268. They are fitted at their ends with handles of felt, cork, rubber, horn, or other materials, which are usually cemented on; this should be carefully done, as a loose handle may come off and cause a bad fall.

The Driving Gear—Motion is communicated from the cranks through the crank axle, front chain wheel, and chain to the back chain wheel, which drives the back wheel and so causes the machine to move forward. Furthermore, by varying the size of the two chain wheels, or, what is the same thing, the number of teeth on each, we can regulate the number of revolutions that the back wheel will make to each revolution of the front chain wheel, *e.g.*, if the back wheel be 28 in. in diameter and the front and back chain wheels have respectively 16 and 8 teeth, the rear wheel will make two revolutions to each revolution of the pedals, which are equal to the revolution of a wheel 56 in. diameter: thus the machine is geared to 56 in., thereby covering 14½ ft. of ground at each revolution of the pedals.

Remarks on the relative advantages of "high" and "low" gears will be found on page 268; the rule for calculating the gear of a machine is to multiply the number of inches in the diameter of the back wheel by the number of teeth on the front chain wheel and divide by the number of teeth on the back chain wheel. Thus:

$$\frac{28 \times 16}{8} = 56.$$

If the machine be fitted with a gear case, measure the distance covered by it during one revolution of the pedals and divide by $3\frac{1}{7}$.

The Crank Bracket and Bearing—The crank bracket is a tubular case or shell of metal forming a portion of the frame, and containing the ball bearings upon which runs the crank axle. [*See* BEARINGS, p. 277.]

The Crank Axle is a solid steel shaft of about ⅝ in. dia., fitted with cones for bearing purposes (*see* below). It carries at its extremities the cranks and, just inside one or other of them (usually the right), the front chain wheel.[1]

Tread—The tread is the distance apart of the feet in pedalling; it should, strictly speaking, be measured from the inside plate of the pedal, where it touches the side of the foot; in practice, however, it is measured between the outside of the crank bosses, *i.e.*, it is the length of the axle, and as crooked cranks are now obsolete, this furnishes a fair standard of comparison.

The tread may vary from $4\frac{3}{4}$ to $5\frac{1}{2}$ inches on machines with clearance for gear cases; on racing machines we should place $4\frac{1}{4}$ in. as the safe downward limit. With the absurdly narrow treads of some American machines, the narrow crank bracket cannot be stiff enough to resist the strain of driving, to say nothing of the disadvantage of the puny bearing necessary (*see* page 278).

The Cranks are bars of steel (usually rectangular in section) of from 6 to 7½ in. in length. At the end remote from the axle they are pierced with a hole for the attachment of the pedals (*q.v.*), and near the axle they broaden into a rounded end or boss. This is pierced with a circular hole to admit the axle, the end of which is flush with the outside of the crank. To secure one to the other, a keyway is cut transversely to the axle through both of them. Into this is fixed a tapering "cotter pin," which when driven home secures the crank in place; this keyway (as of course also the cotter) is circular in section with one flat side, so that the axle presents a flat surface on one side for about ⅝ in.

The distance from the centre of the crank boss to the centre of the pedal axle is known as the "throw" of the crank; in most old machines this was made adjustable by elongating the hole for the attachment of the pedal to form a slot (*see* Fig. 10, No. 2). For remarks on the subject of crank-throw see page 268. Directions for attaching and removing cranks are given under Fig. 7.

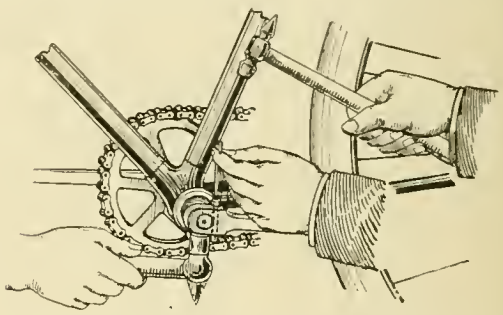


FIG. 7—METHOD OF DETACHING THE CRANK.

To attach the crank—Fit it on to the axle, pressing it in and twisting it round till it comes flush. If it goes on very stiffly a tap with a mallet will drive it home. Then turn the crank upon the axle till the flattened side of the axle is parallel with the keyway, and a clear way can be seen through, and insert the cotter. Then drive the cotter quite home with a hammer, taking care to hold firmly against the opposite side of the crank-boss a heavy mass of metal, *e.g.*, a large hammer or a flat iron. This will take the weight of the blow off the crank axle; if this precaution is neglected the axle and the bearings may be seriously injured. When the cotter is quite home, a washer is placed over the other end, which is provided with a screw, and a nut is screwed home against a crank.

This nut is only intended to prevent the pin getting loose, and any attempt to tighten the crank by it will only result in stripping its thread.

If the crank is found loose, drive the cotter tighter with a hammer and screw the nut home; if it still remains loose a new cotter is required. If, when the cotter is driven home, the length of screw is insufficient to permit the proper tightening of the nut put over the cotter an extra washer.

To detach the crank this process is reversed, a smart blow on the reverse end of the cotter releasing it from the hole, when the crank may be twisted off. The best method is to slack the nut so that it projects over the end of the cotter, and, placing a punch against the cotter, give it a smart blow; the nut will keep the punch in place. In emergencies, the nut thus projecting may be struck with the hammer; but remember that to hit the unprotected end of the cotter will ruin the threads, and the nut will not afterwards engage with them.

The Chain and Chain Wheels—The chain wheels must be exactly in line with each other, or else the teeth will not engage cleanly with the chain, but will rub against its sides, and a great deal of unnecessary friction and uneven wear will result. Much depends upon the degree of tension of the chain, as if it is too slack it may swing from side to side, and, refusing to engage with the teeth, may mount over them and work endless havoc with the frame, whilst, on the other hand, an over tight chain will greatly increase the friction of driving and will wear out the teeth. As the chain tends to "stretch," or rather to increase in length, owing to the wear of the rivets and blocks, means of adjusting it is necessary, and this is obtained by allowing the back wheel, and with it

[1] In the American "Columbia" the crank axle is lengthened and its ends bent to form the cranks; to admit of its removal it is divided in the centre, the two halves locking together.

the back chain wheel, to be moved backwards and forwards in the back fork ends. The exact method of adjustment is described under Fig. 8.

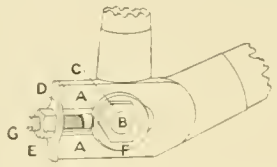


FIG. 8.—THE CHAIN ADJUSTMENT.

F is a plate pierced with a hole in its centre to admit the axle B; from one side of this plate projects a screw C, which passes through a cap D covering the tips of the fork ends A. Over this screw is screwed a small nut E, and when this is screwed up against the cap D it pulls the screw C, and with it the plate A and the axle C, further towards the tip of the fork ends, increasing the distance between the two chain wheels and so tightening the chain.

By slacking the nut, we allow the axle to be pulled a corresponding distance into the fork ends, and so loosen the chain. This process of course has to be performed separately for each side of the axle.

The method of adjusting the chain may be summarised as follows:—

The chain when rightly adjusted should show a very slight deflection from a straight line, in fact the very slightest that will allow it to run freely. This must be judged by spinning the wheel. If the chain is allowed to hang in a kind of festoon it, as we have said above, is highly dangerous. Roughly speaking, the ends of the cranks should have a quarter of an inch play.

To adjust the chain, slack the large nuts that held the axle in the fork ends; to loosen or tighten the chain, slack or screw up each of the small nuts E, taking care to adjust both sides equally. Half a turn of the nut will make a surprising difference; pull the axle home so that the small nut bears on the cap D, then see that the wheel is perfectly equidistant from both of the back stays; should it incline to one side, slacken that side or tighten the other, as accords best with the right adjustment of the chain. Then cautiously screw the nuts on the axle ends moderately tight, taking care in doing it not to force the wheels to one side; if the wheel remains still central, finally tighten the nuts, and lastly screw the small adjusting nuts well home. If you have cone adjusting hubs see that you do not disturb the adjustment of the back wheel bearing in loosening or tightening the fork end nuts (see page 277).

An ingenious variety is that adopted in the American "Crescent," where the rear axle is moved along the back fork ends by means of a rack and pinion, which allows of great precision of adjustment.

The Front Chain Wheel is now usually attached to the crank either permanently, or by screwing on to the crank boss, or in numerous other ways. The rim which carries the teeth is often made detachable, being secured by bolts to the spokes and hub, so as to admit of a ready change of gear.

The Back Chain Wheel takes the form of a ring and runs of a piece with the hub. Its size is an important point: in any case to encircle it the chain has to make far sharper curves than on the larger front wheel, and, the smaller the wheel gets, the sharper become the angles formed by the links of the chain. Of course the larger the back chain wheel the larger must the front one be, if we wish to keep the same gearing, and this places a limit to the size of the back chain wheel. Still, for road work even with a high gear an 8 tooth wheel should be the minimum; but a 9 tooth wheel runs far more easily, especially up hill, and with moderate gear (*e.g.*, up to 72) is not too large to be convenient. For gears up to 64 a 10 tooth is even better.

The Chain—The shape of the chain will be best understood by reference to the annexed illustrations (Fig. 9), to which is suffixed a description.

The distance between the central points of two similar links, *e.g.*, from A to A in Fig. 9, is called the *pitch* of the chain: it is nearly always one inch; the *gauge* of a chain is the breadth of the block. These definitions apply to all types of chain.

The type of chain in most general use is the "block chain" (*a* and *b*) in Fig. 9; the "long link roller chain" (*c*) is obsolete, but its descendants the "Osmond" (*d*) and "Twin Roller" (*e*) and (*f*) seem likely to become the chain of the future.

The Simpson Lever Chain is a production of the last two years. We must confess ourselves sceptical as to its merits, and do not believe this chain to be superior to the ordinary type.

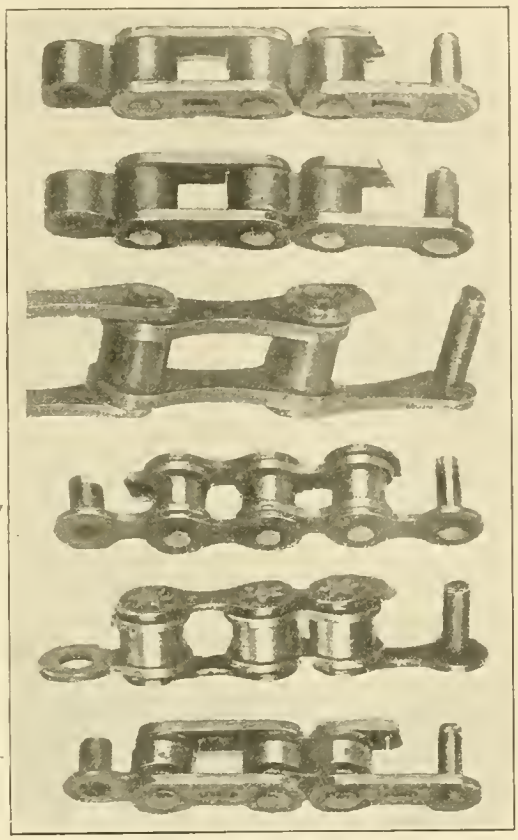


FIG. 9.—THE CHAIN.

a & b, the Block or Humber chain—These consist of alternating solid and open links: into the latter the teeth of the chain wheel engage, while the former, known as the "blocks," take the friction of the teeth. The blocks and "side plates," are held together by and move upon rivets which are either case-hardened as in the Eadie (*a*) or covered with a pen-steel shell or bush as in the Perry (*b*).

c. The Long Link (inch pitch) Roller chain is practically obsolete: it consists wholly of open links, the blocks being eliminated and the friction of the teeth taken by hard steel rollers which revolve on the rivets. This chain has only half as many turning points as the block chain: hence its links make much sharper angles with each other: the extra friction so caused more than compensates for the sweeter running of the roller as compared with the block.

d. The Osmond or short link roller chain (Perry) and

e and *f. The Twin-Roller* (Jos. and Alf. Appleby) have each as many turning points as the block chain, and have the advantage of rolling over sliding friction, as well as that all the parts in tension are of mild metal, and there are thus no hardened blocks to break.

To detach the chain—Get the screw bolt and nut on one of the gear wheels: remove the nut and unscrew the bolt (taking care not to lose them). The chain will then come apart.

To replace—Place the chain in position and bring the ends together on one of the chain wheels: thread the bolt through the side plates and block, screw it home and secure it with the nut: the last usually comes on the *inside*.

Chains in Gear Cases—Before removing the bolt secure the penultimate links with wire or string so that they can easily be recovered from the case: even if the chain is itself removed this method will serve much time in rejoining it: this should be done in the back chain wheel.

Attachment of Chain.—The chain is usually joined by a screw bolt and nut; the mode of attachment is explained

under Fig. 9. A decided advance on this method of fastening is the Eadie connecting link, which explains itself at sight, and is more secure and gives less trouble than the ordinary bolt.

Care of the Chain—No machine that is habitually used on the road should be without a gear case. If you have no gear case, cover the chain with vaseline, or, better still, molten tallow (black lead is terribly messy), and do not wantonly interfere with any moderate accumulation of dust, which will form a protecting crust. When the chain gets too foul to run sweetly (as it will probably do after a bath of liquid mud) immerse it in paraffin for a night, and carefully work it about in the oil, paying attention to any stiff links; then replace it and lubricate as before. A dirty chain will often run tight and require re-adjustment, owing to grit getting under it and raising it from the gear wheels. Riders who do not possess gear cases will do well to keep a second chain for use while the first is in pickle. A dirty gear case should be cleaned out with paraffin.

Gear Cases we regard as indispensable for ordinary road use. There are many varieties, but they fall into two classes: rigid cases of metal or celluloid, and lace-up leather cases stretched on a metal frame; the former are infinitely superior for excluding dust and retaining oil, but the latter will keep off all the mud, and most of the dust, and can be knocked about with comparative impunity; this is detrimental to metal cases.

Metal cases, again, fall into two classes, fixed and detachable; in the former the central part of the case is soldered to the machine, access to the chain and chain wheels being obtained by removing a large plate in the front portion, and a quadrant-shaped section at the back. In the latter the whole case can be removed if desired; this, however, is a serious business, and is only resorted to in the case of an accident to the machine. On the whole, we incline to fixed cases, as being less likely to rattle and admit dust. The oil bath we hardly consider necessary: it suffices to keep the chain freely oiled—not a difficult operation.

Into the intimate structure of gear cases we do not propose to enter—the mechanical reader will find it out for himself; the unskilled rider will let it severely alone.

Variable Gears—Various attempts have been made to devise arrangements by which the gear of a machine may be changed when in motion, *e.g.*, lowered to ascend a hill, or to ride against the wind, or raised for opposite purposes. Considerations as to their value in use will be found on p. 268. Their chief drawback is their additional weight and complication. These are, however, reduced to a very small minimum by the "Reilly and Haigh" gear, which is fitted to the rear hub, and does not increase the tread. It has the further advantage that, when the high gear is used, the extra gear is not called into play, the back chain wheel acting in the usual way. The special mechanism is only used with the low gear when the slight extra friction does not so much matter.

The "Collier" is good, but reverses this principle, and is not so light or neat: the Linley expanding chain wheel (or Protean gear) is very clever and effective, but involves the necessity of a brake, as backpedalling is impossible.

The Pedals take the work of the feet, and consist of a metal framework, running with ball-bearings upon an axle, which is carried on the end of the crank. The frame may carry rubber blocks; or the feet may rest direct on the framework; pedals of the latter type are called rat-traps. The bearings are almost always cone-adjusting, and are of the type shown in Fig. 11. A dust-cap is not infrequently placed over the adjusting cone. This must be removed before the pedal can be adjusted.

All good pedals have the axle encased in light metal tube to exclude dust, and should be provided with oil-holes. Pedal bearings are particularly liable to get choked with mud, and require an occasional rinse out with paraffin.

Attachment of Pedals—This is described under Fig. 10.

The Wheels, which are nearly always shod with pneumatic tyres, consist of a hub connected by steel wire spokes with a rim of wood or metal.

The hub revolves on ball-bearings upon an axle held rigidly in the frame, thus receiving the weight of the rider and machine, and is suspended from the rim by means of the spokes which happen to be uppermost. This is

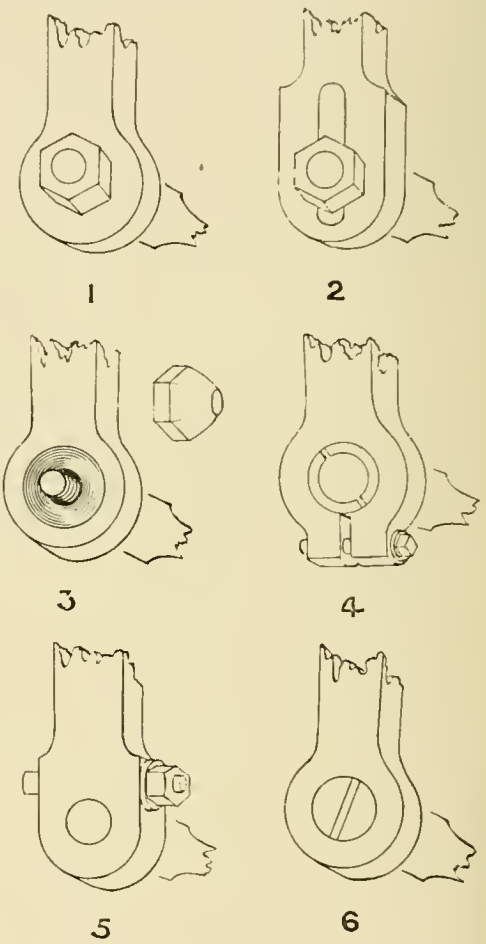


Fig. 10.—Attachment of Pedals to Crank.

1. Axle secured by ordinary nut; 2. The same with adjustable throw; both these methods are obsolete owing to the width of tread necessitated; 3. The nut is countersunk into a recess in the crank (Eadie); 4. Axle screws into crank, the ends of which are split and the "lips" clamped together by a screw bolt (Humber, Swift, B.S.A., &c.); 5. Axle secured by cotter just as the crank is itself attached to the crank axle (Premier); 6. Axle simply screws into crank (Scottish Manufacturing Co.).

termed a Suspension wheel, as opposed to an ordinary carriage wheel, the spokes of which are in compression.

But as the bicycle does not remain stationary, the spokes have yet another kind of strain to undergo. In the back wheel the whole of the driving power is applied to the hub, and thus communicated through the spokes to the rim and tyre. For this reason modern wheels are not spoked radially, in which case the pull on them would be at right angles to the direction of the spokes, and would tend to cause the hub to break away from them (to say nothing of the loss of power), but the spokes leave the hub at a tangent (or nearly so), and the pull is thus communicated from the hub to the rim along the direct line of the spokes. For this reason the tangent wheel, as it is called, is immensely stronger than the old-fashioned

radial or "direct" wheel, which has long since passed out of practical cycling.

To proceed to details: the hub is furnished on each side with a flange, generally pierced transversely with holes for the reception of the spokes, which are headed, and, passing through the holes in the flange, take a sharp turn [1] and run to the rim, where they are screwed into a brass nipple: this nipple protrudes through the rim, but is prevented from passing through it by a broad flange, which bears on the hollow bed of the rim; the tension of the spoke is regulated by turning the nipple, the spoke being thus drawn further or less into the rim. Upon the correct tensioning of the spokes depends the "truth" of the wheel, the natural shape of the rim being of less importance than that imparted to it by the pull of the spokes. The intersections of the spokes are usually tied with thin wire, though the advisability of this is by no means certain. The spokes should be thickened (butt-ended) where they pass through the flange, as well as where they are threaded to screw into the nipple. The hub should not measure less than 2 in. between the spoke-flanges.

The intersections of the spokes and the rim often form only one row along the centre of the rim: it adds to the rigidity of the wheel if they are placed in two rows on either side of the centre.

Size of Wheels—Most machines are fitted with two 28 in. wheels; it is urged by some that a 30 in. front wheel gives better steering, but we scarcely think that it is worth its weight. Ladies' machines are often built with 28 in. and 26 in., or two 26 in. wheels.

Removing the Wheels—To remove the front wheel, take off the nuts and washers, and, pressing with the thumbs upon the hub, spring the fork ends one by one over the end of the axle. To replace it, reverse the process.

To remove the back wheel, take off the sliding end of the gear case; slacken the fork end nuts, when the axle and with it the nuts, washer, and chain-adjuster may be slid out of the fork ends. To replace it reverse the process, taking care to fit the chain-adjuster (*see* p. 275) well on to the fork ends.

Steel Rims—Steel rims are either hollow or solid: the former are lighter and more rigid, but decidedly more liable to permanent damages from stones and similar obstacles. The Westwood is a solid rim with the edges curled into small tubes and is peculiarly suited for wired-on tyres.

Wood Rims are best built either of segments of wood dovetailed into each other, or, as in the case of the Fairbanks, constructed of thin layers of wood with the grain running in different directions, and are covered with canvas; they are unsuited to detachable tyres, as the outward pressure of the jacket tends to splay the rim out with disastrous consequence. They are particularly liable to damage in detaching wired tyres. There is, however, undoubtedly a peculiar "life" in wood rims, and when built for tube tyres they are lighter than steel. Single-Tube Palmer, Morgan and Wright, and Woodstock tyres, are specially suitable for them.

In all cases wood rims should receive every three months a liberal coating of good varnish: this will greatly increase their powers of resistance to wet, and prolong their life.

Bearings—A bearing occurs where any part of a machine, which rotates, bears upon another part which does not rotate, or *vice versa*.

A ball bearing is one in which the two bearing surfaces, instead of running directly on each other, are separated by steel balls; thus instead of the friction of one level surface upon another we have only the friction of small points of these surfaces against the balls, and to a large extent rolling friction is substituted for sliding friction.

The most usual type of ball bearing consists of two cones affixed to the ends of an axle and resting upon balls, which themselves bear upon cups contained in the case of the bearing. These may be divided into two classes: *a.* where the cups are stationary, and the axle and cone revolve, *e.g.*, crank bearing of a safety; or *b.* where the axle and cone are fixed and the cups revolve, as in either wheel of a safety.

This distinction is, however, of no great importance, as with slight modifications any description of one type will equally apply to the other.

A more important distinction for our purpose is based upon the method of adjustment of the bearings. For a bearing to run freely it is necessary that the balls should not be so tightly jammed as to prevent their revolving, nor that the bearing should be so loosely put together as to admit of the balls running out of their proper circular track; to insure this it is necessary that we should have some means of regulating the distance between the cup and cone.

To attain this end we may move the position of either the cup or the cone, and the most convenient and accurate way of doing this is by providing one or other with a screw thread engaging with some other portion of the machine, which for running purposes is of a piece with it, and securing it to that portion by some locking arrangement.

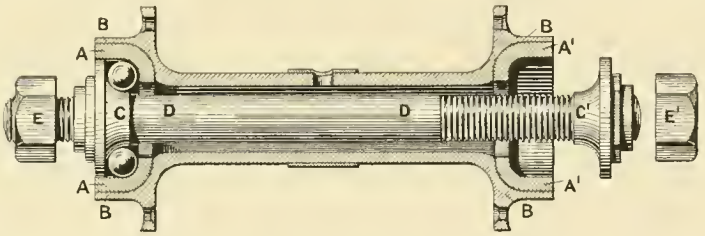


FIG. 11.—DIAGRAM OF CONE-ADJUSTING HUB (EADIE).

The cups A A′ are fixed into the case of the hub B; in these are placed the balls, which are held in place by the cones C C′; of these C is of a piece with the axle D, but C′ is free, working upon the threaded end of the axle to allow of adjustment.

To take the bearing to pieces—Remove the fork end nuts, slide or spring the wheel out of the forks and lay it on its side with the free cone C′ uppermost. We can now unscrew the free cone C′ and, holding the other end of the axle firmly in place, tip the balls out of the cup A′; place the hand under the cup A and remove the axle, when the opposite balls will fall into the hand.

To put the bearings together—Lay the wheel on its side with the cup A uppermost; put the axle D through the hub with the fixed cone C uppermost, place the balls in the cup, and let the cone C fall upon them; then, holding the axle firmly in place, turn the wheel over so as to rest on the end of the axle nearest to C. The balls may now be placed in the cup A′ (the screwed end of the axle will keep them in place); lastly, screw the free cone C′ down upon the balls; when it is screwed home the wheel may be set upright.

To adjust the bearing—When the wheel is in place, slack the nut E′ (the opposite nut need not be touched), grip the flattened sides of the cone C′ with the open spanner provided, and screw it up as far as it will go, then unscrew it about a quarter of a turn and screw up the nut E; take the wheel by the rim and see if there is any perceptible side shake in the bearing; if there be none, and the wheel runs freely, the adjustment is correct; if there be any perceptible shake, screw up the cone a little; if the wheel runs stiffly, slacken it off. It will be noticed that tightening the nut often tightens the bearing also, and for this allowance has to be made. If the proper spanner be not available, the cone may be turned by twisting a piece of string round it, taking the ends in the hands and pulling them tight. The cone may readily be forced round.

We may accordingly divide ball bearings into two classes.

(*a*) **Cone-adjusting bearings**, in which one cone screws upon the axle, and the cups are fixed in to the case of the bearings.

[1] In the "New Rapid" the flange of the hub is provided with small studs pierced at right angles to the width of the hub, and through these the spokes are inserted. This obviates the undesirable weakening of the spoke by bending, and is decidedly preferable.

(*b*) **Cup adjusting** (commonly called **disc-adjusting**) **bearings**, in which the cones are immovably fixed to the axle and the cups (discs) screw into the case of the bearing.

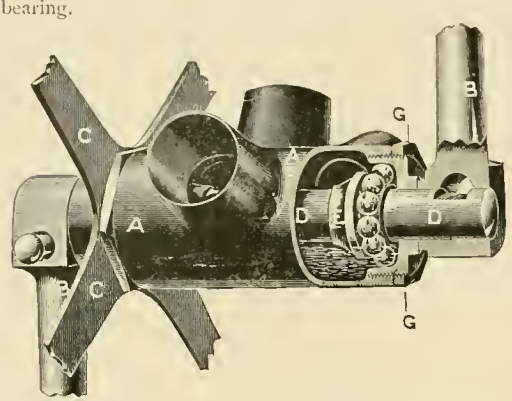


FIG. 12.—DISC- (OR CUP-) ADJUSTING CRANK-BEARING (CENTAUR).

A is the case or shell of the bearing and is called the chain bracket; B B, the cranks; C, the front chain wheel; D, the crank axle; E, one of the cones (of a piece with axle); F, one of the discs (or cups) fitted with "flat" to give grip to spanner; G, locking ring to lock disc against bracket. NOTE.—The above locking arrangement (though very good) is not of the usual type; see Fig. 13.

To take to pieces—The following directions apply primarily to the crank bearing, but with slight modifications apply also to the hub. Detach both the cranks (B B) and the chain wheel (see Fig. 7); undo the locking arrangements (in this case the locking ring G) and unscrew the left hand cup; if the cup adjusts by means of holes in its outward surface this is done with a pin-hole spanner; if it is provided with a shoulder (as above) use an ordinary open spanner. When the cup, and with it the balls, are withdrawn, the axle D and the balls of the other side will come away, leaving only the chain-side cup in position; do not remove this unless necessary; if you must do so, make a file mark across the case of the cup and the case of the bearing to make sure of your replacing it in exactly the same position; otherwise you will set the chain-wheel out of line. The cup may then be removed by undoing the locking arrangement and screwing it out.

To put together—First screw in the chain side cup (if you have removed it) to the exact position it previously occupied, as indicated by the file mark (an error of a whole revolution is not likely to be made and may be guarded against by counting the threads outside which, before removing the cup, lie outside the bracket). Lay the bicycle on its chain side, and put the chain end of the axle D through the cup (there is always more space outside the cone on the chain end of the axle than on the other). Drop the chain side balls into the cup and let the cone of the axle fall on them. Next very carefully turn the machine over, pulling on the chain end of the axle while so doing to nip the balls between the cup and cone to prevent them escaping; with the same object, when the machine is turned over, keep the opposite end of the axle supported.

Take the other cup; fill it with vaseline and place the balls in a ring inside it, taking care not to warm them or the cup, or the vaseline will melt; then very gingerly pass it upwards over the downward end of the axle and engage it in the threads of the bracket, screwing it home very gently, especially as the balls begin to approach the cone, or they may over-ride one another and jam.

When the cup is screwed home replace the chain wheel and cranks and adjust the bearing.

To adjust—Slack the locking ring G or its equivalent; apply an open spanner to the shoulder of the disc or cup F and loosen or tighten till an adjustment is made (see directions under Fig. 11).

If, as is usual, the disc has pin-holes instead of a projecting shoulder, turn it by inserting into the holes the prong of a "pin-hole spanner"; the crank-boss is usually an obstacle to the convenient accomplishment of this method of adjustment: only one firm (the Osmond Co.) wisely cut a semicircular piece out of the crank-boss to give clearance; but, in emergencies, the disc may be cautiously driven round with a long nail and a hammer.

The head bearing of the modern safety is of a different type, and is described under Fig. 5.

Before entering on the description of these two classes we may here remark that a bearing should have its ball races as far apart as possible; a narrow bearing is very ill-adapted to resist a one-sided strain, such as that experienced in the driving of a safety. Furthermore, power should be applied to the axle inside and not outside the ball races; if the pull of the chain comes outside the crank or hub bearings, the axle is clearly forced sideways by its leverage, and much uneven friction and consequent wear will result. Ideally, the driving should be central; as this cannot be effected, we must bring the front chain wheel well up to the bearing, and by "dishing" it, and causing its chain-ring to overhang the race, make the strain as near central as possible. This is well carried out on the Humber; in the case of the hub chain wheel (especially with disc hubs) it is easy to place the chain-ring well within the bearing.

(*a*) **Cone-adjusting bearings**—In the diagram of an Eadie hub (Fig. 11) it will be seen that by unscrewing the cone C′ we alter the relation not only of C′ itself to the cup A′, but that of the cone C to the cup A. When the required adjustment has been obtained, the cone C′ is fixed in place by screwing up the nut E, which drives the washer F against it.

(*b*) **Cup- (or disc-) adjusting bearings**—In these the cones are permanently fixed to the axle, and the cups screw bodily into the case of the bearing (*see* Fig. 12). It will be seen that the cup and cone respectively, necessarily face opposite ways to what they did in the

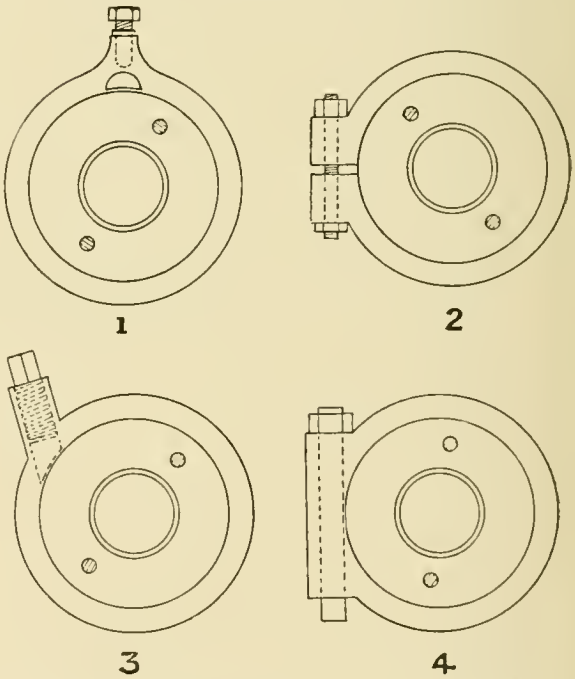


FIG. 13.—METHODS OF LOCKING THE CRANK-BEARING (CUP-ADJUSTING).

1. Set screw: acting on block at right angles to disc; 2. Split bracket; "lips" compressed by screw bolt; 3. Set screw acting on block pressing sideways on disc; 4. Cotter and nut. See also Fig. 12.

cone-adjusting bearing, and this has the effect of placing the ball races further apart. The locking arrangement too is quite different, and some difficulty has, in the case of hubs, had to be overcome in devising a satisfactory method of effecting this.

A description of the cup-adjusting crank bearing and hub is given, together with full instructions for their manipulation, under Figs. 12 and 13.

Comparison of the two types—We consider cup-adjusting bearings decidedly preferable. Firstly, they are more dust proof. In each type there is space for the entrance of dust between the cup and the coned axle: but in the cup-adjusting bearing this is only the size

of the diameter of the axle itself: in the older type it is the size of the diameter of the whole cone, and this can only be mastered by complications in the way of dust caps, &c.; secondly, for the same reason, it is oil retaining, and, thirdly (in the case of hubs), the bearing can be adjusted without disturbing the fork end nuts and so possibly the chain adjustment. Fourthly, the same disc-adjusting bearing allows for the same length of axle a slightly greater distance between the ball races. There is, however, apart from these incidental advantages, absolutely no essential difference in the running of the two types, and a good cone adjusting bearing is far better than a bad specimen of the other.

Care of the bearings—As we have shown above, careful adjustment should be made when necessary: refrain, however, from tinkering with the bearings more than you can help, especially from taking them to pieces. Nuts which are always being tightened and slackened cannot be expected to hold. In fact, never touch any part of the machine unless it really calls for it.

The best way of testing the running of a wheel bearing is to put the valve of the tyre towards the top of the wheel, and see that its weight causes the wheel to oscillate backwards and forwards till at last the valve settles down at the very bottom of the wheel. The back wheel, even when the chain is in place, should oscillate several times, the untrammelled front wheel much longer. If the bearing is unevenly worn you will not be able to effect a perfect adjustment: make the best compromise you can, remembering that it is better to put up with a *little* shake in the bearing than to hinder the free running of the wheel: but if a worn bearing is run too slack the wear is only exaggerated. The just mean is to be learnt only by experience.

Oil the bearings with good oil (Rangoon oil or sperm with a little paraffin is best) say once in a hundred miles or so, and then but sparingly, don't slop the oil about, as it attracts dust: if, however, you find a ring of dust around the entrance to bearing it is better not to remove it, or at all events very rarely, as you are very likely to rub it in the bearings, especially if they are the cone-adjusting variety. Disc-adjusting bearings may be oiled more copiously, and much less often. If from any cause the bearing should become clogged, it should be slackened and paraffin injected: it should then be spun round, fresh paraffin being added till it runs out perfectly clean: the bearing should then be adjusted, left to run dry, and oiled. It is a good thing to have a hole fitted with a screw plug drilled in the bottom of the crank bracket for the escape of the paraffin. A piece of chenille lightly wound round the axle where it emerges from the bearing will go far to exclude dust.

The Step is usually a roughened prolongation of the left-hand back fork end nut, but is occasionally brazed on to the back stays.

The Brake—The back wheel brake (except the pneumatic variety) has long since been condemned by its cumbrousness, hence the brake is usually applied to the front wheel; though the effect of a sudden and violent application is very apt to drive back or even break the front forks, or to cause the machine to slip. Furthermore, pneumatic tyres seldom take kindly to the frequent use of the brake. For these reasons we would strongly urge readers to regard the brake as an appliance to be used only *in extremis*: back pedalling comes automatically to a practised rider, and can usually at ordinary speed be applied far more rapidly than any brake. Still, emergencies which call for a brake, though rare, are generally imperative; and none but really experienced riders will dispense with its use. The novice should, however, accustom himself to use it as little as possible, and should above all things eschew the immoral practice of "coasting" with the brake hard on—ruinous alike to machine and tyres.

The ordinary front wheel brake is applied to the tyre, and is fully described under Fig. 14.

Several effective brakes have recently been devised which are applied to the rim instead of the tyre.

The band brake consists of a band of leather, encircling a drum on the back wheel, which by means of an arrangement of rods is, when required, pulled into contact with the drum. It is powerful but extremely troublesome, being seldom entirely clear of the drum.

The Dolittle Brake is applied by backpedalling to the back wheel; once the brake is on, it remains so till the

FIG. 14.—THE BRAKE (RALEIGH).

To adjust—Slack the screw-bolt or set-screw which is half way down the telescopic brake-rod; put the brake-lever at such a distance from the handlebars that it can readily be grasped by the hand, and yet have space for effective action; put the brake-spoon about $\frac{1}{4}$ or $\frac{3}{8}$ in. clear of the tyre; then tighten the bolt or set-screw. When this is done, see that when the brake-lever is pressed home the tyre is effectually gripped.

pedals are again pressed forward; it is a little difficult at first to master its use, but we can testify to its thorough efficiency.

The pneumatic brake consists of a suitably mounted rubber cushion, which is expanded by the pressure of air, applied by means of a rubber ball and tube attached to handlebars, and so grips the tyre; but there is yet considerable scope for its improvement.

The Seat Lug (see E in Fig. 2) is compressed by a bolt and grips the saddle pillar which slides into the diagonal of the frame: to adjust the height of the saddle, the bolt of the seat lug is slacked, the pillar raised to the desired height, and the bolt again tightened.

The Saddle Pin carries the saddle. It may consist of a single upright tube sliding into the diagonal of the frame and held there by the compression of the seat lug and having the saddle clipped to its upper end. More commonly, however, a second horizontal tube is brazed to it and carries the saddle, for which a backward and forward adjustment is thus obtained. Such pins may be T-shaped, or L-shaped; the latter are divided into "Forward L-Pins" and "Backward L-Pins," accordingly as the horizontal arm points forwards or backwards. The former are nearly universal.

The Saddle—The saddle normally consists of a pear-shaped piece of leather, suspended upon a metal framework: the sharp forward end is known as the "peak": the rounded rear end is rivetted to a plate called the "cantle," which is secured to the framework.

The most usual type is the "Hammock" shown upon the bicycle in Fig. 1. Here the framework consists of two or more long springs running from peak to cantle, and secured midway by a clip in the method shown in Fig. 15. The tension of the leather is regulated by a rather inaccessible nut just under the peak; the Brampton has a circular hole in the front of the peak for the insertion of a screwdriver—an excellent plan.

The "tilt" of the saddle is an important point; the

requirements of each rider vary, but we think that for a standard adjustment the peak should be about ¼ of an inch above the back of the saddle. Experiments should, however, be made until a comfortable angle is reached; the method of effecting this is shown in Fig. 15.

We are, however, strongly of opinion that the saddle and the spring should be independent of each other: *i.e.*, the saddle should have a perfectly rigid metal framework, and be bolted to the spring. In the hammock saddle when a jolt depresses the saddle leather, the peak obviously becomes more prominent, relatively to it. A rigid saddle never alters in the relative position of its parts and, once comfortable, is always comfortable. We have found the old "Brooks B. 20," with a "Salter" or "semi-Arab" spring, infinitely preferable.

Racing saddles should not be used on the road; they are always breaking and the absence of a spring to ease down the weight of a rider puts most unfair strain on the machine.

Of the numerous saddles in which the peak is eliminated we have no good to say; the absence of the peak makes the rider lose the "grip" of the saddle which

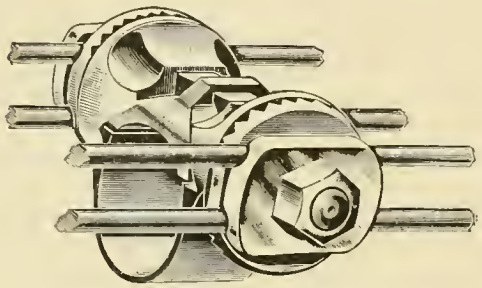


FIG. 15.—THE SADDLE CLIP (BROOKS).

To adjust the position—Slack the end nuts on the transverse bolt; the clip, and with it the saddle, may then be shifted to any position upon the L-pin; then tighten the nuts.

To adjust the tilt—Slack the nuts as before, when the saddle and springs may be swung bodily upon the bolt to any desired tilt; then tighten the nuts. In all cases see that the clip grips the spring wires in their centre; adjustment should not be obtained by sliding the wires along the clip.

NOTE—The above type of clip will fit either an upright or L-shaped pin.

is so essential to good steering; we consider them uncomfortable and dangerous.

Pneumatic saddles are now seldom used, excepting those kinds in which the pneumatic contrivance takes the shape of a pad *under* the ordinary saddle.

Mudguards—There is nothing to beat the ordinary steel guard: we have, we believe, tried every "detachable" guard on the market and found them all wanting, except perhaps the celluloid one with wire stays. Those abominations that are hung with strings from the back of the saddle can seldom be restrained from getting askew.

The ordinary mudguard is secured by screws or clips to the bridges of the back forks and back stays or front fork crown, and further supported by wire stays terminating in a flat ring which encircles the wheel axle and is secured by the fork end nut. Our only complaint is that they are almost always made too narrow (the "Swift" is an honourable exception), and that the stays should be secured to the fork by independent clips, so that they can be detached without disturbing the fork end nuts—always a thing to be avoided.

Multicycles, or cycles carrying two or more riders, have, owing to their speed, recently come into use for pacing and other purposes. Such of them as seat their riders side by side may be dismissed as mere fads: but where the riders sit one behind the other, it is evident that while their united power is available for the propulsion of the machine, the resistance of the air amounts to little more than that to be faced on a single. The tandem safety, *i.e.*, a safety for two riders one behind the other, is, however, the only representative of the class with which we need be concerned.

Tandem safeties, owing to the great length of the wheelbase, the great weight carried, and the extra stress

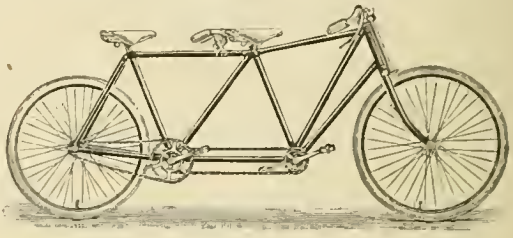


FIG. 16.—TANDEM FOR TWO MEN (SWIFT).

of driving the machine, should be built of far stronger parts than singles. Whippiness of frame is even more detrimental to the good running of a tandem than of a single, while the consequences of a breakdown are usually serious. More particularly the head and the front forks and crowns have to be specially strengthened: triple fork crowns are often used, and the forks are wisely duplicated; when this duplication is lateral the outer forks are often carried to the top of the head. The chains of tandems should never be placed on opposite sides.

The frames of tandems present great variety: the principle of triangulation referred on p. 272 should be fully carried out as in Fig. 16. When the machine is built to carry a lady before or behind, the difficulties of construction are greatly increased.

The steering on machines built for two men, or for a lady behind, is best left to the front rider only, the rear handles being rigidly fixed. Where the steering is coupled, the coupling rods should always be carried low down on the frame, so that the front rider is not shut in, as in the case where the handle-bars are connected by a straight swivelled rod.

Where the machine is designed for a lady in front, double steering is necessary, but there are several contrivances for gearing it down in favour of the rear rider, the front handle-bars being allowed only a slight movement, and the steering merely indicated to the front rider. We may, however, say that we consider that the balance of advantage rests with machines on which the lady sits behind (Fig. 17).

The adjustment of the parts of a tandem is, with the exception of that of the front chain, performed as with a

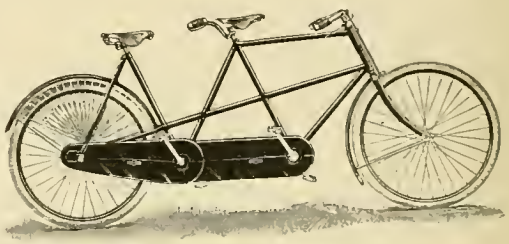


FIG. 17.—TANDEM FOR LADY TO SIT BEHIND (RALEIGH).

single. The adjustment of the front chain is best carried out by placing the front crank-bearing eccentric to the bracket (which is made very large): by turning the whole bearing in the bracket the tension of the chain can be adjusted.

OTHER TYPES OF CYCLE.

The Bevel-Geared Safety, an invention of some years' standing, has recently come into fresh prominence

in the "Acatene." The crank axle carries a bevel-toothed wheel which drives a hollow shaft revolving on ball bearings upon what would otherwise be the chain stay, and this by a similar arrangement of bevel-wheels drives the back wheel. We do not anticipate that this will for serious riding oust the chain-driven safety: but for light work, especially in and about town, its neatness and the absence of both chain and gear case may bring it into some popularity.

Front Driving Bicycles—In these power is applied to the front wheel: one result of this is that the wheel is in a manner gripped by the feet, which thus to a great extent control the steering. In the early days of rear drivers, which then steered atrociously, this was a distinct gain: but in view of the present perfection of the steering of the prevalent type, we think it more of a drawback than otherwise, especially in the case of the smaller front drivers. Two types are extant:—

The Ordinary or High Bicycle, the name of which perpetuates the memory of its former glories. The front wheel is large, ranging from 60 inches down to 46 or so, and is not geared: the hub is of a piece with the axle, which revolves in two independent ball bearings placed at the fork-ends. Its most recent type, the "Rational Ordinary" has the front forks "raked," *i.e.*, sloped backwards from the vertical, the saddle well back, and the rear wheel of at least 24 inches, in place of the old-fashioned wheel of 16 inches or so. Such a mount, fitted with pneumatics, is perfectly safe, free from side-slip, never goes wrong, and will last for ever. The "Farringdon" is the only example of the type now on the market, but no better could be desired.

The Crypto is the only survivor of a numerous class of geared front-drivers. The gearing is by means of an arrangement of small toothed wheels of great ingenuity: the machine was originally made as the "Geared Ordinary" in size of from 40 to 46 inches; this was, however, soon abandoned in favour of wheels of from 34 to 38 inches: while the last two or three years have seen the introduction of the "Bantam" in which the driving wheel is only 26 to 32 inches.

We can say from long experience that the medium sized Crypto is a safe and comfortable mount, cleanly, free from side-slip, and never giving trouble. It is, however, while easier running than the Bantam, markedly slower than the Rear Driver: at a slow pace this inferiority is not very noticeable, but for fast or heavy work (*e.g.*, uphill) it is quite distinct. The Bantam scores over the medium sized F.D. in portability, weight, and decreased wind-resistance: the steering, however, is not nearly so good, nor is the machine so safe a mount. It is, moreover, difficult for a tall rider to get sufficient length of reach without resorting to an excessively backward position.

The Tricycle—It is with some regret than we have relegated this type of cycle to the "etceteras." It has many good points:—freedom from side-slip, and absence of the nervous strain always present, though not always consciously recognised, as the result of the need of preserving the balance of a safety. These reasons, with its ability to support itself, render it a good machine, not only for traffic riding, but for long distance road riding. Its inferiority to the safety is not, moreover, so marked as is generally believed, as till quite recently the performances of Mr. Bidlake and others upon it were not conspicuously inferior to those of their contemporary safety riders.

Accessories.

Spanners—All machines should be provided with spanners to fit each nut, and these should always be used in preference to an adjustable wrench.

Oil-cans—Cheap oil-cans are to be avoided—a really well-finished one is worth its cost.

Tool-bags should be large enough to enable the contents to be readily packed; here, again, cheap varieties are to be avoided.

Lamps—It yet remains to be shown that paraffin and benzine lamps are superior to the old-fashioned variety. Those made by Miller, Lucas, and Salsbury leave little to be desired. Excessively small lamps always give trouble. Sliding side-lights should be fitted, as they are the most air-tight and not liable to injury.

Bells—A loud bell is a distinct advantage. Repeating bells are preferable to single-strikers, but require careful manufacture.

Pumps—Short pumps are an insufferable nuisance: 18 inches is the best length. Aluminium pumps we have found light and quite efficient—more so than celluloid. It is a distinct advantage to have all the loose parts (*e.g.*, the rubber tube and nozzle) made to screw inside the pump: the aperture should be closed with a dust cap.

A foot-pump for home use is a most desirable possession.

Pump-clips—Hill's rubber pump-clips are efficient and cannot possibly cause rattle. Celluloid clips tend in time to loose their grip of the tubes which they encircle. Metal spring clips, lined with horn, and secured to the machine by means of a little solution, are thoroughly reliable.

Cyclometers—There are numerous excellent cyclometers on the market: but most of them will be found to register from 30 to 40 yards too much in the mile, owing to their not allowing for the flattening of the front tyre. Those which rotate with the hub or crank are quite unreliable at high speeds.

Pneumatic Tyres.

The reason of the superiority of the pneumatic over the obsolete solid and cushion tyres appears to lie in the following facts. Each successive portion of the tyre as it comes into contact with the ground is compressed by the weight of the rider, and when it is freed from the weight immediately flies back to its original form, and, pushing against the road, helps to propel the cycle, restoring to it nearly as much energy as was absorbed in its compression. A solid or cushion tyre absorbs just as much force in its compression, but owing to the relative sluggishness of rubber as compared with compressed air, fails to regain its shape with sufficient promptitude to push against the road and so be of service.

A fast pneumatic tyre is one in which the materials hinder as little as possible this "resilience" of the air. The other essentials of a good tyre are immunity of the rider from vibration, ease in repair, durability, and freedom from puncture.

The last of these is the least important; any ordinary puncture can be repaired in ten minutes, and as with the usual light roadster tyres puncture occurs but rarely, it is not necessary to cumber and retard the tyre with protective bands. Durability is a matter of using good material, and sufficiently thick rubber; while freedom from vibration and resiliency go together and are considered below.

Pneumatic tyres normally consist of three concentric layers, which, beginning from the inside, are:—

I. The air-tube, made of very slightly vulcanised rubber, and fitted with a valve. II. A layer of inextensible fabric to prevent the air-tube from bulging or bursting, and to take the strain of driving. III. A layer of more highly vulcanised rubber to protect the fabric from the road: it is usually thicker on the centre or tread than on the sides, and on racing tyres becomes a mere strip of rubber mounted on the fabric as a tread.

The second and third members are nearly always of a piece, and are together known as the "jacket"; in some tyres they interpenetrate each other, but are more usually fastened to each other in such a way that they can be separated if needful. They should preferably not be vulcanised but merely solutioned together, which greatly facilitates repairs to the jacket. In single-tube tyres all these members are more or less permanently fastened together.

Nature of the Fabric—It cannot be too strongly emphasised that it is by means of the fabric that the

force of driving is communicated from the rim to the tread of the tyre and so to the ground: the rubber is only to act as a protection to the fabric; except on the tread, it takes none of the driving strain, and adds very little to the actual strength of the tyre.

Without entering into details we may say that the best results are obtained from a fabric which, like the "Flexifort" (Dunlop), Palmer, or Scottish, consists of layers of pendent threads running diagonally from edge to edge of the cover and not interwoven. This is called a "tangential" fabric because the pull travels lengthwise along the threads (as in a tangent spoke) and not across them; it has the further advantage of eliminating the friction and "sawing" action that takes place between threads of ordinary canvas.

The Rubber of the Jacket—It is essential that this should be of high quality: too many of the tyres on the market contain an abnormal amount of incorporated earthy matter, useful to a slight extent to give substance to the rubber, but beyond that point a mere adulterant. Good rubber may be known by the peculiar brownish mottlings which appear when the powdery sulphur has been cleared off.

Non-slipping devices—The jacket of roadster tyres is generally made with fluting or corrugations to prevent "side-slip." Such devices inevitably detract from the resilience of the tyre, especially when their effect is unduly to stiffen the jacket by rendering it too massive. Other jackets, where the corrugations are intermittent, (viz., in the form of isolated bosses, knobs, &c.) suffer severely from the use of the brake. We consider that the fastest and most effective device is that of scoring the jacket with a few deep flutings, the only drawback being the liability of the hollows to cuts and punctures. A slightly less effective, but more durable, type is when the tread is left plain and one or two bold ridges are placed on each side of it.

Non-slipping bands may be fixed with solution to smooth tyres, and afford the further advantage of saving them from cuts or punctures. On very flinty roads this is the only way to save the tyres: when badly cut the band may be replaced.

How hard to pump—The tyres should just show a slight flattening when ridden: for riders of about eleven stone, the finger and thumb of one hand should be able to make no impression on the back tyre and a very slight one on the front. Heavier riders should inflate rather harder, and *vice versâ*.

Classification of tyres—Pneumatic tyres may be classified under two heads:—I. Detachable tyres. II. Tube tyres.

In the former the jacket is a broad band, secured to the rim by its edges, the air-tube resting on the rim and being protected from it by a strip of tape: the latter present to the eye the appearance of a simple hose-pipe, and are usually cemented to the rim.

Detachable Tyres.

Method of repair—First of all inflate the punctured tyre as hard as possible, and examine its exterior for the puncturing body: unless the puncture be very small, a quick ear will often be able to locate the puncture by its hissing sound without further measures. In such a case only a small part of the jacket need be detached. If the spot cannot be detected it will be necessary wholly to remove one side of the jacket from the rim. First, however, apply the moistened finger to the valve to ascertain that the fault does not lie there.

Carefully clean the tyre, as the entrance of grit beneath the jacket is most destructive to both fabric and air-tube: then deflate it and detach one edge of the jacket (see below), in the case of the back wheel choosing the side furthest from the chain, so as to avoid greasing the air-tube: with the same object wind a piece of rag round the end of the hub. Pull the air tube from under the cover; it is not usually worth while to undo the valve and so remove it altogether from the rim. Cautiously inflate the tube so that it just feels plump to the hand: over-pressure will cause it to swell up and burst. A large puncture can then often be heard: if not, pass the whole of the tube in front of the lips, when a very slight escape is usually noticeable: test any suspected spot with the wet finger. Should this fail the whole tube must be passed under water (a small bowl will suffice) stretching each successive portion as it is immersed: the smallest puncture will be betrayed by a persistent stream of bubbles. If this is unsuccessful it will be necessary to remove the valve from the rim (*see* p. 285), replace it in the tube, re-inflate, and test the small remaining piece of tube round the valve.

Having found the puncture, mark it with an indelible pencil, carefully dry the tube for some distance round, and gently rub the surface round the puncture with a piece of sand-paper to remove the whitish deposit of sulphur on which no patch will stick. The sand-paper on a matchbox may be used; or the wetted head of a wax match will equally well remove the sulphur. Next, with a circular motion of the finger, apply round the spot a thin and even coating of rubber solution: leave this to dry, and cut a patch of sheet rubber, inclining the scissors so as to make a bevelled edge; clean the non-bevelled side with sand-paper or benzine and coat it also with solution. Allow time for it to set; it should be "tacky" to the touch, and up to ten minutes the longer interval the better: then apply the patch to the puncture, remembering that once the two solutioned surfaces have touched, the patch cannot be removed without cleaning off and beginning *de novo*. Press the patch firmly down, powder it with French chalk to prevent it from sticking to the jacket: it now only remains to replace the valve and air-tube in the rim, and to attach the jacket. Before again inflating make sure that the air-tube is not "nipped" by the edge of the cover.

A very small puncture or a leak at the join of the tube, which escapes detection by the ordinary method, may often be roughly located by immersing the whole tyre, fully inflated, in a trough of water, when the escaping air will come through the neighbouring spoke holes.

If the hole in the air-tube be large, as in the case of a burst, the rubber patch should be covered by one of canvas applied in the same way. In the case of a long slit a little ingenuity will enable you to put a patch on the inside; this should be reinforced by another on the outside. For punctures under the valve canvas, cautiously peel off the canvas (using benzine or even rubber solution to free it from the air-tube), apply a patch, and again stick down the canvas with solution, allowing a short interval to admit of its drying. A leak at the inset of the valve usually arises from cutting of the air-tube; the valve must be inserted in a fresh place, and the original hole treated as a large puncture.

If, however, a section of the tube should happen to become hopelessly rotten, and patching is hopeless, it is sometimes advisable to cut away the affected portion and make a fresh join: in order to do this, fold back about 1½ inches of one end of the tube, much as one might turn back the end of one's sleeves: coat this and the outside of the other end with solution, and when they are "tacky" lay one side of the folded end against the side of the other end; put the thumb inside one of them and press them well together; then very quickly unroll the rolled end over on to the other, pressing them well together, and taking care to avoid puckers. This operation requires nice manipulation and should not be attempted by a novice.

Butt-ended air-tubes—The whole operation of repair is greatly simplified by using in place of the ordinary endless air tube a butt-ended tube as shown in Fig. 18. In case of puncture the joint is undone, the valve nut unscrewed and the tube bodily removed from the machine, without the necessity of taking out the wheel.

The convenience of this is very great, nor does the contrivance perceptibly slow a roadster machine.

Puncture-sealing air-tubes appear to answer

satisfactorily for small punctures. When, however, they do leak, it will be found very difficult to locate the puncture, as a tube which leaks at high pressure may not do so at the low pressure necessary in testing by water.

Cuts and Bursts in the Jacket—Cuts which do not entirely pierce the rubber of the jacket should be cleared of all dirt by teasing with a splinter of wood: the sides of the cut should then be solutioned, and after an interval brought firmly together: a large hole may be plugged with cotton wool soaked in solution. This will prevent wet reaching the fabric and so causing it to rot. Cuts which reach the fabric and bursts (usually the result of a neglected cut) must be repaired from inside. Detach one edge of the jacket: with benzine or solution separate the fabric from the rubber for a short distance round the cut: then apply to the inner surface of the rubber an ordinary but large rubber patch to keep out water: after a wait, tenderly replace the fabric, and strengthen it with a good-sized patch of proper repairing canvas, applied in the same way as is a rubber patch to the air-tube. Dust

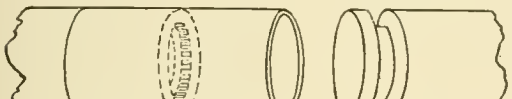


FIG. 18.—THE BUTT-ENDED AIR-TUBE (SMITH'S PATENT).

with French chalk and replace the jacket. A really badly cut jacket should at the earliest opportunity be sent to the makers for repair.

Dust blisters occur from the entry of dust into a neglected cut: it will often be found that the dust has worked between the fabric and the rubber: it should be carefully teased out and the cut filled up as described above.

CLASSIFICATION OF DETACHABLE TYRES.

Detachable tyres may be classified under two general heads. I. Tyres held in the rim independently of inflation. II. Tyres held in the rim by inflation.

Under the first head we include all detachable tyres which could be depended on not to leave the rim even if ridden deflated. For this reason this class is theoretically preferable, though in actual practice the risk of an inflation-held tyre leaving the rim in the case of a sudden burst is but slight; such a tyre would take some time to work itself off. The inflation-held tyre is, however, subject to this drawback, that, if the jacket be carelessly attached to the rim, the air-pressure occasionally blows it off, though in the vast majority of cases it automatically drives it into its correct position.

A. Tyres held independently of Inflation are practically all secured to the rim by wires. The **Dunlop** is the most widely used of the class; the jacket carries along each edge an endless inextensible wire, which rests in a channel formed on the inside of the rim. These wires are smaller in diameter than the extreme edge in the rim, but larger than the diameter of its bed. Hence, if the wire be pressed well into the bed of the rim on one side of the tyre, it becomes no longer concentric with the rims, and its opposite side tends to rise over its edge, when it may be readily detached.

The great merit of the Dunlop, apart from its fabric, which is described above, is its absolute simplicity. It defies the novice to injure it. He can either get it on and off, or he cannot, but there is no middle course of imperfect attachment leading to disaster. To our mind its great drawback is that the working of the wire into the rim is in muddy weather a dirty process, which might be obviated by the use of that part of the Welch patent which relates to joining the wires by adjustable screw-blocks. Moreover, now and then a tightly fitting tyre will be found which is decidedly hard to detach.

The **Beeston** tyre is essentially the same as the Dunlop. It has however the ends of one of its wires bent and brought through the rim, to which they are attached by screws. For its racing and road racing varieties Flexifort fabric is used.

The Scotts' Standard, Woodley, Warwick, Ideal, and New Silvertown tyres present unimportant deviations from the Dunlop type.

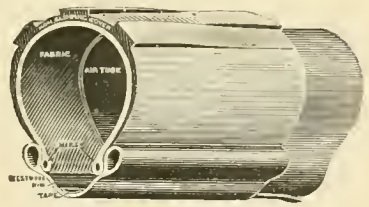


FIG. 19.—THE DUNLOP.

To remove the jacket, push the wire into the bed of the rim, beginning opposite the valve, and working it well down for nearly half its circumference by running the thumb along it. The wire will tend to rise over the edge of the rim in the neighbourhood of the valve, where a suitable lever (*e.g.*, a tyre-lever, the handle of a tooth-brush, or a claw spanner) is slipped under it, and its outward end forced well down towards the spokes till the wire comes over the rim. This generally happens with a slight jump. It should never be necessary to insert a second lever: this is characteristic of the bungler.

To replace the jacket, slightly inflate the air-hole and place it in position. Then beginning opposite the valve, place as much of the jacket as possible in the rims; if the wire beginning opposite the valve) be worked into the rim in the manner described above, the outstanding portion may usually be slipped over its edge with the fingers.

Before inflating, see that the jacket lies evenly in the rim, pulling it up and pushing it down when necessary; see also that the tube is not "nipped."

The **Detachable Scottish**[1]—In this tyre, by an ingenious arrangement described under Figs. 20 and 21, the

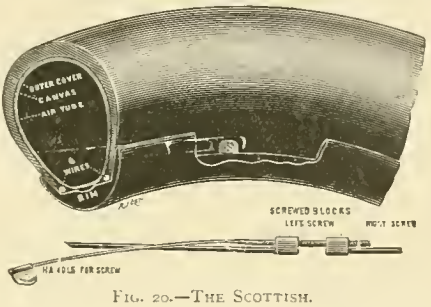


FIG. 20.—THE SCOTTISH.

In this case the wires are not continuous; their ends do not quite meet, and terminate each in a screwed block; through these blocks passes a separate wire which is, as will be seen from the illustration, fitted at one end with a right and left handed thread, and at the other with a small thumb-piece which serves as a handle. When the thumb-piece is unscrewed, the blocks recede from each other and the total circumference of the wired edge of the tyre is increased, so that it can readily be slipped over the rim; screwing up the thumb-piece causes the blocks to approach each other and makes the wired edge too small to slip off the rim. When not required the thumb-piece is tucked under the edge of the jacket, where it is securely held by inflation.

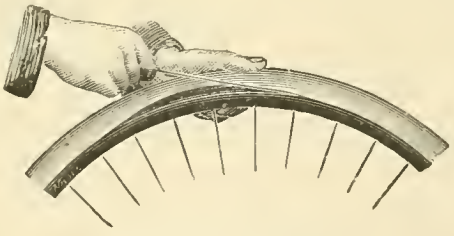


FIG. 21.—THE SCOTTISH.

To detach the jacket, deflate and look for the thumb-piece, the position of which should be marked on the rim; disengage it from the jacket and unscrew it five or six turns, when the wired edge may be lifted over the edge.

To replace.—Reverse the process, taking care that the blocks are screwed quite home.

circumference of the wires can at will be increased and the edge of the tyre readily slipped over the rim. This

[1] In spite of the fact that the adverse result of a patent action has caused the withdrawal of this tyre, we see no reason for omitting it, or modifying the opinion expressed above.

method of attachment by an adjustable wire we regard as the most promising departure yet made. We can say from long experience that this attachment is easy, quick and reliable, while, as the jacket has only to be touched in one place, repair can be effected without even soiling the hands.

B. Tyres held by Inflation—In this class of tyre the covers are made with stiffened edges forming on each side a beading which engages in a groove in the rim into which it is pinned or "clinched" by the air-pressure. The attachment and detachment of this class are considerably easier than in the case of wired tyres.

The **Clincher** is the oldest tyre of this class, and bears an excellent reputation; its best quality is fitted with tangential fabric.

The **Palmer** is made with the well-known Palmer fabric, which when applied to a single-tube tyre created

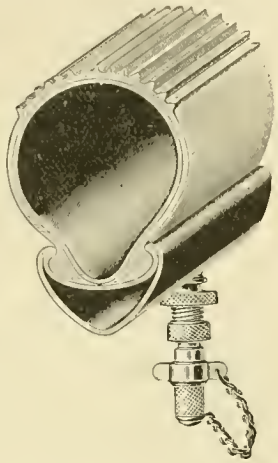


FIG. 22.—THE PALMER.

To detach—Press one edge of the jacket inwards so as to disengage the beading from its groove in the rim: continue the process by running the thumb under the beading till it can be lifted over the rim by the fingers. No tool is required. If the beading be rusted into the rim a little force may be necessary to detach it.

To replace—Lift the edge on to the rim, carefully tuck the beading into its groove, and inflate. Be careful not to nip the tube.

These directions apply to the whole class.

much sensation in 1894. It is a thoroughly good and fast tyre.

The **Bagot** is on Clincher lines, but it is claimed that the vulcanisation of the outer cover is so graduated that the sides are left very flexible, while the tread is particularly adapted to resist puncture. We believe that this is to a large extent true.

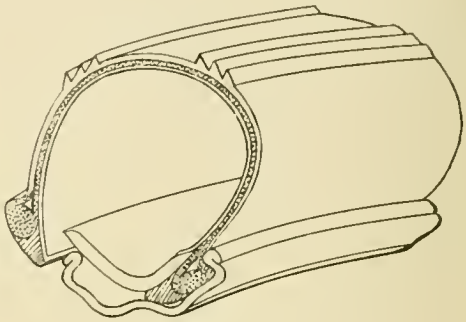
The **Clipper** is a new tyre with tangential fabric, on exactly the same lines.

The **Fleuss** or "Tubeless Tyre"—Here the air-tube is split open and vulcanised to the jacket; to one edge of the jacket is attached a flap of soft rubber which is locked by the act of inflation against the opposite edge: to ensure a good junction, the flap and the rubber-lined inside of the jacket on which it bears are anointed with soft soap.

Punctures are detected by blowing to full riding pressure and testing by the usual methods. The tyre when deflated is opened and patched on the inside. It is a clever device, but we do not believe that the "nuisance" of an air-tube is very widely felt. Moreover, should the tyre be cut through by a flint, we cannot see how the damaged fabric is to be reinforced with canvas, unless the rubber which lines the jacket be first peeled off, and this would be a serious operation.

The **Fleetwood**—The beadings, which are stiffened with fine crimped wire, are bent back into a hook-like section and engage in the inwardly recurved edges of the rim.

The **Woodstock** is explioted by the makers of the Fleetwood. The edges resemble those of the Fleetwood, but one of them is curved inward so as to engage with the other. The locking is thus independent of the rim.



DETACHED FOR REPAIR

FIG. 23.—THE FLEUSS.

Inflate the tyre and locate the puncture by wetting the jacket. Clean all grit from the tyre and disengage the edge marked "open this side," in much the same way as a Palmer. The edge which carries the rubber flap is left in place.

Repair the puncture by placing a patch inside the jacket, and replace the jacket as in the case of the Palmer, pushing the rubber flap upwards, so that it is clear of the groove in the rim.

It is advisable from time to time to rub the two surfaces constituting the air-tight joint with soft soap.

The merit of this promising tyre lies in the absence of outward pressure on the rim. It thus shares with the tubular tyres the advantage of being well suited for wood rims, without the characteristic disadvantages of that class of tyre. It may be obtained with tangential fabric.

TUBE TYRES.

Tube tyres fall under two heads, single-tube and double-tube tyres: both are cemented into the rim. Owing to the absence of outward pressure from the tyre, they are well suited to wood rims.

A. Single-Tube Tyres—In the former all three layers of the tyre are vulcanised together so as to form a single tube: such tyres are nearly obsolete in England, the Boothroyd and the Palmer being the best known. Repairs are difficult and unsatisfactory, consisting:—
I. Of the simple injection of solution into the puncture.
II. The insertion into the puncture, by means of a kind of bodkin, of rubber threads covered with solution.
III. The excision of the affected portion with an instrument like a cheese scoop, and the insertion of a rubber plug—a truly terrible remedy.

It is moreover difficult to make sure that a puncture has been repaired through the entire thickness of the tyre. The repair may extend only to its outer portion, so that the air gets through the unrepaired inner tube and forcing its way between the layers of the jacket, escapes by the numerous tiny cuts that are always to be found on the outside of a tyre which has been some time in use.

A hopeless single-tube tyre may be slit open at the valve and a butt-ended air-tube inserted: the slit being afterwards laced up.

It is sincerely to be hoped that American makers will not succeed in forcing this moribund type of tyre on heedless English buyers. Most American firms however are now fitting double-tube and detachable tyres.

B. Double-Tube Tyres—These differ from the single-tubes in having the air-tube distinct from the tubular jacket. There are only two important representatives of this class.

The Morgan and Wright Quick Repair Tyre—At the valve the inner surface of the jacket is slit for a short distance and laced up by means of eyelet holes, which are fended from the air-tube by an internal flap: through this aperture the air-tube, which has scarfed ends, may if necessary be withdrawn, the jacket being

"crowded" off the rim at this point and afterwards re-affixed to the rim by "reviving" the cement with benzine or solution. This however is seldom necessary,

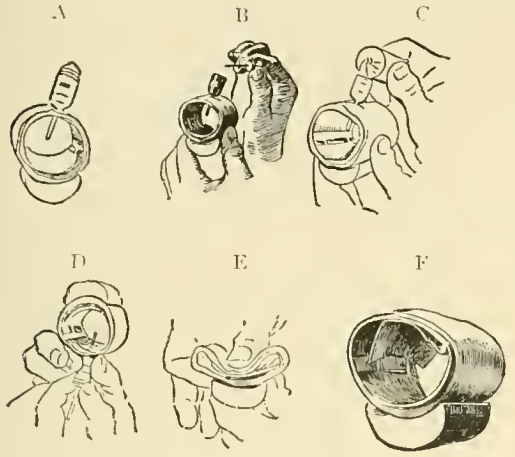


FIG. 24.—THE MORGAN AND WRIGHT TYRE.

To repair—Punctures are detected by blowing to full pressure, and wetting the jacket. When the puncture is found, keep the tyre at full pressure and force through the puncture the special injector supplied (see A); then unscrew the cap of the injector, thus withdrawing the needle-plug, leaving the nozzle still in the tyre: the air should then rush out. Fill, with the special solution supplied, the cup seen in C, and engage in it the screwed butt-end of the needle-plug; then turn the wheel so that the puncture is at its lowest point, and screw the plug home into the cup as in D; this will force the solution into the air-tube, where it will form a small pool around the puncture; next entirely withdraw the injector, and, again shifting the affected spot to the top of the wheel, press the thumb firmly on to the tyre, as in E; this will spread the solution over the air-tube and patching strip; slightly inflate the tyre and leave it for two minutes for the solution to set; then once more press the tyre in the same manner; this will cause the patching strip to adhere to the air-tube and the repair is effected (F). The tyre may now be blown to full pressure.

In finally inflating, the air between the air-tube and the jacket will find its way out through the cut in the latter, and may simulate a puncture. Should, however, this appearance persist, deflate the tyre and again press with the thumb to perfect the adhesion of the repairing strip. On no account insert the injector a second time, or the repairing strip will itself be punctured.

If the puncture cannot be found, or if it be necessary for any cause to remove the air tube, deflate the tyre, and tear it off the rim round the valve; undo the lacing, and tie round the scarfed end of the tube remote from the valve a piece of cord sufficiently long to encircle the wheel with a bit to spare, taking care not to mutilate the rubber. Then simply pull at the other end of the tube till the whole is withdrawn, and only the string left in the jacket. The tube may now be repaired in the usual way (see p. 282). If time admits, it is a good plan to use the opportunity to undo all the injection repairs, by cautiously pulling away the patching strip where it adheres to the bottom of the tube, and repairing them in the ordinary manner. We thus start afresh with the whole of the repairing strip again available for future use.

To replace the tube, rub it with French chalk and blow some into the jacket; then, by pulling the string, it is again drawn into position. See that the ends overlap neatly, and before lacing up make sure that the canvas flap is in place, or the lacing will chafe the rubber. Warm the cement on the rim, or, better still, moisten it with benzine or rubber solution, force the tyre on to the rim, and inflate.

To repair cuts in the jacket, make a slit in its inner side, mend in the usual way, and finally lace up the slit, fending the air-tube from the lacing by a piece of canvas. Then cement the tyre down.

as the air-tube is provided with a broad strip of repairing rubber attached to its side by light ligaments. Repairs are executed by the method described under Fig. 24.

The drawbacks to this tyre are: 1. That a second puncture *in the same spot* can only be repaired by removing the air-tube. II. That in the event of a deep cut in the jacket an incision has to be made in its inner surface, the cut repaired, the incision laced up, and the tyre again cemented down. For this reason it is unsuitable for flinty roads; but on good roads it gives little trouble. Its great merit is that it can be safely used with wood rims (p. 277) and a very light wheel thus made.

The New Scottish is the only British representative of the class. It is secured to the rim by a flat band of steel, adjustable as to size by an adaptation of the method described under Fig. 20.

The repair of punctures is as with the Morgan and Wright. The tyre is deflated, and solution injected between the air-tube and the jacket, which is lined with unvulcanised rubber. The solution is spread by pressure and left to get sticky; finally a twist to the tyre puts the punctures in air-tube and jacket out of line; then by a second pressure the two are stuck together, and the repair effected.

VALVES—The valves of English detachable tyres are all twisted into the air-tube in the same way. The exact method is described under Fig. 25.

To insert the Valve in the Air-Tube—Cut in the air-tube a circular hole, slightly smaller than the diameter of the body of the valve A; stretch the hole and slip through it the head, which may be lubricated with a touch of solution. Take a diamond-shaped patch of fine fabric, cut a small hole in the middle, pass it over the valve, and with the usual precautions solution it to the tube B. Let it set thoroughly, and slip over the valve the plate C; screw down on to it the nut D, taking care that the plate is longitudinally parallel to the tube; do not screw the nut D so tightly as to mutilate the rubber. Put the valve through the rim E, secure it with the lock-nut and washer G and F, and lastly fit in the plug H.

a. The '94 Woods—The body A is provided half way down with a shoulder; into this fits the plug H, which is guided into it and prevented from revolving by two small projections at its top fitting into two nicks in A. The plug C is furnished with a shoulder, sloping the reverse way to that in A. H is traversed by a channel to admit the air, which turns sharply towards the bottom and emerges from its side. A thin tube of rubber K fits somewhat tightly over its lower portion, covering its shoulder. A cap L, screwing on to A, forces this shoulder against the shoulder at B, the rubber making an air-tight joint.

The valve is not unscrewed for inflation; the incoming air forces up the rubber tube at D, but as soon as the pressure from without ceases the rubber resumes its position and no air can escape from inside.

Care should be taken in screwing up the cap E not to cut the rubber between the two shoulders. Leaks occur from this and the perishable nature of the tubes, which have to be renewed from time to time. The old one is pulled off, and a new one carefully worked on.

b. The '96 Woods is similar, except that the shoulders are dispensed with, and the air-tight joint made by a rubber washer between the plug H and the body A. It is lighter than the old valve, makes a smaller hole in the rim, and there is no risk of cutting the rubber tube.

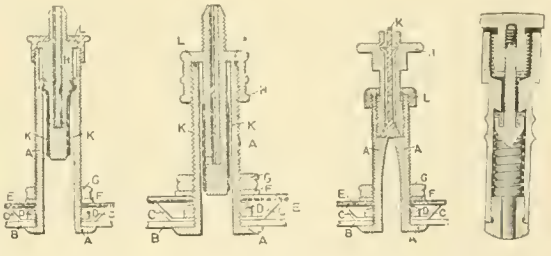


FIG. 25.

c. The Lucas—The body A is threaded internally, and has a shoulder half way down; into it screws the plug H, which carries inside it the pin K; K terminates downwards in a cone, the downward ends of H are chamfered off internally to fit it. The conical end of K has its base resting on the shoulder of A; when H is partially unscrewed air may be forced between it and the conical end of K; the air, attempting to return, only forces these coned surfaces into close contact, though in practice a slight regurgitation takes place; when inflation is completed H is screwed down and a positive joint made between it and K as well as between K and A. The screw cap L is merely to prevent the plug from being inadvertently withdrawn; it must be screwed off before H can be removed.

To inflate, unscrew H as far as it will go, afterwards again screwing it up; to deflate, unscrew H, and with the nail press down K.

Should the valve leak, clean it with methylated spirit.

d. The Morgan and Wright is similar in principle to the Lucas, though it depends entirely on the contact established between the rubber cone and the body of the valve. To take it to pieces screw out the bottom plate, when the coiled spring and conical-ended pin may be withdrawn. To deflate, press down the pin.

The leading English valves are the 1894 Woods, the 1896 Woods, and the Lucas.

Of the two Woods valves we rather prefer the '94, though it necessitates a large hole in the rim. There is, however, little to choose between them.

The Lucas valve is made entirely of metal, and is therefore not affected by climatic conditions which to some extent influence the rubber air-tight joint of the Woods, nor has it to contend with the naturally perishable nature of that material; on the other hand, the rubber of the Woods is easily replaced, while a rusty or grit-choked Lucas is not easy to put right. The Lucas is decidedly the easier to inflate, but has to be unscrewed for the operation.

We also give an illustration (*d*) of the Morgan and Wright valve, which is somewhat similar to the Lucas, except that it has a rubber plug.

MISCELLANEOUS—**Care of the Machine**—Cycles should be kept in a dry place not subject to extremes of temperature (this for the sake of the tyres). After use a machine should have the bulk of the wet mud promptly removed to avoid rust, though it is better to defer thorough cleaning till it is dry: a rag damped with paraffin should then be used, obstinate clots being touched with a drop of the liquid; water is to be avoided.

In wet weather the plated parts, excepting of course the handlebars and the outside of the cranks, should receive a thin coat of vaseline; this will collect dust, but no harm will be done to the machine. Plating is best cleaned of rust by hard rubbing with paraffin and polished with chamois leather or Selvyt; it is speedily ruined by harsh, gritty soaps which are so useful for many domestic purposes.

Breakdowns—Full directions for dealing with the normal ailments of cycles and tyres are given *passim* in the description of machines.

In cases of serious damage it is best, assuming that the machine is rideable, to let it alone till a skilled repairer can be secured; an infinity of harm may be done by unskilled attempts to true frames or wheels.

A broken spoke may usually be neglected for a short time. Should the wheel lose its shape, bend the ends of the broken spokes into loops and secure them together with several plies of copper wire or string, securing the required tension in the former case with a pair of pliers, in the latter with a piece of wood used as a tourniquet, and finally sprung behind the neighbouring spokes. A "buckled" wheel will occasionally resume its shape if the indented part be pulled outwards.

Frames may be straightened by a side pressure of the foot against the crank bracket, by passing iron bars down the head socket or diagonal, and so forcing them straight, or by passing a bar through the frame lengthwise and crosswise so as to bear on both head and diagonal and levering it straight—but these are terrible remedies. Front forks which have been driven back may be straightened by sitting down and pulling, getting a purchase with the feet against the crank bracket.

Broken tubes or forks may be strongly tied to splints of wood hollowed to receive them, the wire or string being tightened by wedging. Broken handlebars may be replaced by a stick lashed to their remains. Bent pedal pins are best dealt with by removing the frame of the pedal and riding on the base pin. Bent cranks may be cautiously straightened in a vice: attempts to put them right when on the machine will result in worse mischief. Broken chains may often be patched up with copper wire. Broken balls should be at once removed from the bearing; on emergencies, when this has been done, the machine *may* be ridden, but it throws an unfair strain on the bearing.

H. GRAVES.

N.B. I wish to express my sincere thanks for assistance rendered in the preparation of this article by Messrs. A. B. Evans, H. J. Swindley and F. R. Fowke.

CYCLE RACING—Cycling has many claims on the community outside the race path, and it is quite conceivable that it might in course of time have attained its present position without the aid of racing, but its rapid advance is indubitably due in a very great degree to cycle racing and racing men. The experience gained by the manufacturers in their efforts to meet the demands of the latter for lighter and consequently faster machines assisted very materially in the improvement of the cycle, as constructed for the ordinary user, and it is a mere truism to assert that the roadster of to-day is simply the racer of yesterday.

The subject primarily divides itself into two sections, road racing and path racing, whilst the latter may be again divided into three subsections, early path racing, the transition stage between ordinary bicycle and safety-bicycle racing, and modern path racing, with, as a necessary pendant, a few words upon training for cycle racing.

Road Racing was of course the original form of the sport. All the early velocipedes were made for use upon the highways, and as the claims made for the new machine were based upon the facilities which it offered for rapid locomotion, it was only natural that many of the very earliest efforts made to attract the attention of the public, and to interest them in it, took the form either of rides against time, or of actual races upon the road.

The story of the advent of the first French bicycle in London, and its exploitation in Charles Spencer's gymnasium by Mr. Rowley Turner, has often been told. Mr. Mayall was present at the unpacking of the crate when this strange *jouet d'enfant* from Paris made its first appearance. He learnt to ride it, and early in January 1869 was fired with a great ambition, and started from Clapham for Brighton, but was compelled to give up, completely exhausted, at Redhill, no less than 17¼ miles from his starting point, and return to town by train. After more practice he, in company with Rowley Turner and Charles Spencer, made a second attempt in the following February; and though his companions fell by the way, he succeeded in reaching Brighton alone in about sixteen hours. The feat was the subject of some public comment at the time, but as some three weeks later the brothers Chinnery *walked* to Brighton in eleven hours and twenty-five minutes, the advantages of the new steed, as demonstrated by Mr. Mayall's heroic efforts, were considerably discounted.

Between 1869 and 1874 a number of steadily improving performances were recorded in the public press. In 1871 Messrs. R. King, H. N. Custance, and J. C. F. May, of the still existing Amateur B.C., were probably the first bicyclists to ride one hundred miles inside twenty-four hours on the road, journeying from Amesbury to Stonehenge and back to London.

Charles Spencer, who made the essay with Mayall in 1869, together with G. Hunt, C. Leaver, and William Wood, journeyed in June 1873 from London to John o' Groat's, some 700 miles, in fifteen days, the performance evoking considerable interest; whilst William Wood in August of the same year rode to Brighton and back, 104 miles, inside eleven hours. H. Stanley Thorpe also put in some good rides; but perhaps the individual ride which did the sport most good at this juncture was accomplished in May 1874, when the Hon. Ion Keith Falconer rode from Bournemouth to Hitchin, piling up the mileage to 135 miles, and, which was more to the point, writing a very full account of the journey for the *Field*. This attracted a vast amount of attention, and stimulated a large number of other bicyclists to essay long distance rides. Amongst the names of men who accomplished big feats in this direction should be mentioned those of H. E. Kearley, A. D. Butler, Frank Smythe, W. E. N. Coston, F. E. Appleyard, Wat Britten, H. Blackwell, jun., and many more of less note.

By this time racing on the road was often held in an informal manner, the development of pace followed, and the road racing side of the sport grew with great rapidity. On one occasion a twenty-four hours' contest, organised by a firm in the trade, started and finished at Anderton's Hotel in Fleet Street, the chosen course being to Bath and back, and in due season clubs were formed, and a series of such contests arranged. The great North Road and the level stretches of highway branching from it became the scenes of highly interesting contests which at first were of a very sporting and purely amateur character. The arrangements were carried out by large batches of honorary officials, and the events attracted the attention of many riders apart from those actually engaged in them as competitors. The former were distributed over the country, checking the racing men at appointed spots, guiding them over the chosen routes, attending to their general welfare, making the pace if necessary, and in every way promoting their interests with impartial enthusiasm. Many splendid performances were accomplished on these occasions. F. Snook, G. P. Mills, J. H. Adams, T. R. Marriott, F. T. Bidlake, M. A. Holbein, T. A. Edge, and, *facile princeps* at the game, F. W. Shorland, with many others, put their names upon the pages of the road record book. The attention attracted by these contests, and the very full reports published by the sporting as well as the cycling press, caused the popularity of this phase of the pastime to grow exceedingly. The winner of a big road race not only secured great credit to himself but gave a widespread advertisement to the machine he rode, and as a natural consequence the trade appeared upon the scene, the friendly character of the assemblies gradually disappeared, things became more business-like, pacing was supplied, tandems and often larger multicycles swooped down in shoals upon the highways, and some riders unquestionably allowed themselves to be subsidised by the makers of the machines they rode. To crown all, the pneumatic tyre came along, increasing the speed at which the competitors and their pacers dashed along the highways, so that road-racing on cycles, which at one time created only mild excitement in the towns and villages through which the riders passed, developed into a serious danger and became an intolerable nuisance. The fact was only tardily recognised by the supporters of this form of cycle racing, after stringent measures to suppress it had in many districts been resorted to by the police authorities.

From time to time feeble revivals occur, but the doom of road-racing is sealed. Yet, ere it passes away, it is well to recognise how immense were the services which in its earlier stages it rendered to the sport. The great rides from Land's End to John o' Groat's, the twenty-four hours' races, and the many established records, advertised and emphasised the claims of the cycle to be recognised as a new factor in the matter of locomotion; nor should the world ignore the large number of enthusiasts who worked to establish cycling in the position it holds to-day. The inestimable benefits derived from the road-racing side of the sport should not be forgotten now that its abuse has made it impossible any longer to encourage its continuance.

Path-Racing — Long before the period when the abuse of road-racing led to action by the authorities to enforce its discontinuance, cycle racing upon prepared paths in enclosed grounds had become very popular. The athletic developments of the late sixties had given rise to a vast interest in athletic sports, and innumerable meetings were being held throughout the country, the running races taking place upon specially prepared cinder tracks, or upon grass courses staked out upon suitable stretches of turf; and in due season races upon bicycles were promoted as interesting additions to the sports' programme. This introduced the bicycle to the notice of a large number of people who would not otherwise perhaps have had an opportunity of seeing it at its best, for the men who raced upon these courses were of necessity masters of the machines they rode, and bicycle racing soon became very popular.

It was at such a meeting, held in Dublin, at the Lansdowne Road grounds, in October 1875 that Mr. W. P. Blood, one of the earliest of the Irish racing men, covered the mile in three minutes and eighteen seconds, the first fairly well authenticated performance over that distance on record; whilst in 1876 F. L. Dodds, a promising member of the Cambridge University Bicycle Club, rode 15 miles 1480 yards on

the Cambridge track in one hour. Prior to these feats some short distance performances, more or less well authenticated, had been put in upon the road; but from 1876 onward all the records for short distances were made upon the track, with the exception of one or two downhill straightaway mile times accomplished on the road for purposes of advertisement in 1895.

These paths were all level, or approximately so, and surfaced with cinders or some similar material. "Dirt tracks" they would be called in American phraseology to-day. They were unbanked, and in some cases the corners were very sharp, but nevertheless some splendid feats were accomplished upon them on the high machine, specifically known as the *ordinary* bicycle.

Amongst the men who, down to 1879, made records on the Ordinary, may be specially noted the Hon. Ion Keith Falconer, whose marvellous two miles' time withstood many assaults on the parts of later flyers; and the result of such performances was an increased interest in the sport, and its rapid growth in public estimation. Finally came the phenomenal performer, destined to awaken a far wider and more active interest, in the person of the late Herbert L. Cortis. Cortis was not only an excellent bicycle rider: he also possessed the gift of judgment, and rode with his head as well as his legs. No less than four times did he lower the one mile record, covering that distance in 2 minutes 52½ seconds and 2 minutes 47⅘ seconds in 1879, and in 2 minutes 43⅕ seconds and 2 minutes 41⅗ seconds in 1882, the last figures remaining unbeaten until 1885, and being then surpassed by Mr. M. V. J. A. Webber by one-fifth of a second only. Cortis was the first man to cover twenty miles in the hour, a feat which he would have accomplished in September 1880 but for a fall in the nineteenth mile, as at eighteen miles he was well inside even time: but on the old Crystal Palace track, on the 27th of July 1882, he covered 20 miles 300 yards in the 60 minutes, a few days later riding twenty-five yards further in the same time on the Recreation Ground track at Surbiton. His many feats, without doubt, assisted materially in increasing the interest taken in cycling; and they may even now be regarded with wonder, when the machines, the tracks, and the methods of training which obtained when they were accomplished are considered and compared with the machines, the tracks, and the training of the racing cyclists of to-day. There are many people who still consider Cortis's twenty miles in the hour as good a performance as has ever been accomplished on a bicycle.

Many good men followed in Cortis's steps, notable among them being M. V. J. A. Webber, C. E. Liles, P. Furnivall, F. P. Wood, R. H. English, G. Gatehouse, J. H. Adams, and last but not least F. J. Osmond, whose feats upon the Ordinary bicycle over all distances made him worthy to be compared with Cortis at his best, especially in his wonderful powers of handicap riding. His 2 minutes 28⅕ seconds for a mile at Paddington in 1890 marked the zenith of Ordinary cycle records at that distance, whilst B. W. Attlee's 21 miles 180 yards in 1891 was the high-water mark for one hour, and the long series of tall champions on tall machines was finally closed in 1892, when the last Ordinary championships were run.

The safety bicycle, so called, was first introduced in a practical form by J. K. Starley. The idea, embodied in the rear-driven cycle of to-day, of employing as a medium of propulsion a chain or band, appears to have originated with Mr. Henry Bate, but to Mr. Starley is due the credit of making the first practical machine of the type. Many makers followed his lead, and it was not long before the rear-driving safety found its way on to the racing path. In 1885 H. E. Laurie rode 21 miles 125 yards in the hour upon it at Long Eaton. In the following year the Union added Safety Championships to its list of fixtures, and Osmond at his best on the Ordinary was riding when the rear-driver began to establish itself as a racing cycle. Ordinary *versus* Safety matches were arranged at several meetings; but the Ordinary men usually won, probably because they possessed the experience which is of such great importance in actual racing, and the merits of the two types were discussed at considerable length, until the advent of the pneumatic tyre. This was better adapted, for many obvious reasons, to the safety than the Ordinary, and the former naturally rose rapidly in the favour of the racing men, so that the users of the high machine became fewer year by year.

The noticeable improvement in speed which followed was not only due to the tyre. The racing men of the post-Ordinary days were drawn from a much larger field than in the earlier times of racing. To succeed in the old days certain physical advantages were almost absolutely necessary. A man had to be big, and gifted with long legs, ere he could propel and master the larger wheels, 58 or 60 inches in diameter, which told most effectively upon the path. Possibly not one hundred men out of a thousand possessed the physical qualifications, and scarcely ten per cent. of that limited number had the other qualities necessary to develop a champion: whereas, with the system of gearing up applied to the Safety, every man of the thousand could ride and master his racing machine; and, the field for selection being larger, the fitting survivors were more numerous, and the chances of finding a phenomenon were vastly increased.

Nevertheless the early winners on the Safety bicycle were often old Ordinary riders. They possessed experience and racing knowledge, and, as a natural consequence, they scored. Amongst them may be noticed such riders as H. H. Sansom, R. J. Mecredy, P. W. Scheltema Beduin, and

F. J. Osmond, all old Ordinary bicycle racing men prior to the advent of the Safety. The men who practically started racing on the Safety failed at first when in competition with older riders; but they did well in record attempts, and amongst them may be mentioned H. E. Laurie, R. A. Lloyd, W. C. Jones, H. Parsons, and R. L. Ede.

Despite the number of racing men who had come to the front on the Safety, no one man singled himself out as clearly above his confrères until the arrival from America in 1892 of A. A. Zimmerman. This rider provided the phenomenal development which had been looked for for some time. He took a long time to get fit, but suddenly jumped into form, and showed himself practically invincible, especially amongst men whose form he knew. His few defeats after he once got fit, as, for example, that which he suffered at the hands of Verheyen, at Berlin, were simply due to his holding unknown competitors too cheaply, and also to his failing to allow for the ease with which a rider may be shut in upon European tracks, which are narrow compared with the wide sweeps of American courses. Since Zimmerman's first visit many other foreign riders have come to England to compete, and a number of fine riders have been developed at home.

Any attempt to enumerate the men who have performed great feats upon the rear driver would be an overwhelming task.

The National Cyclists' Union, which organises and conducts these championships, has been properly termed the Jockey Club of cycling, for it discharges towards the racing side of the sport exactly the functions which the Jockey Club discharges as regards horse racing.

The Union, with a view to securing greater control of the racing path, has adopted a licensing scheme; and every cyclist—amateur or professional expert or novice—who desires to race, must first ask for a permit and undertake to obey the rules of the Union.

This course is a direct result of the more liberal reading of the Amateur Definition, which was one of the first reforms instituted by the Union; and to the Union belongs the credit of being the first body ruling amateur sport to erase from its definition of an amateur what is known as the "Mechanics' Clause." Up to the date of the Union formation the Amateur Definition excluded from the amateur ranks the "Mechanic, Artisan, and Labourer." The new definition enabled any man—whatever his position in life—to be an amateur if he chose to submit to the rules. Of course so wide a gate admitted some who should not have been admitted, and this has necessitated the Licensing Rules. These rules, which permit the governing body to deal with an individual case, are clearly to be preferred to a definition which absolutely barred whole classes of the community without discrimination.

It may be well to add that although the racing work of the Union is more showy, it also does a great deal of other and useful work in the interests of the genuine road rider and the tourist.

Training for cycle racing falls very much within the lines of training for any other athletic sport, with one marked and important exception. The running man, whatever his distance, necessarily carries his own weight, and as seven pounds extra weight will stop a horse, it is quite easy to understand that the flat-racing athlete gets rid of every ounce he can spare. Often, in practice, he contrives to divest himself of a pound or two too much, as a natural consequence going weak, and probably failing in the contest for which he has prepared himself. With the cyclist this necessity and the dangers it involves do not exist; for just as it is easier to wheel a heavy weight in a four-wheeled truck than to carry it on one's shoulders, so the few pounds of extra weight on the form of a cyclist, being wheeled rather than carried, make little material difference to his progress; and it is this point that requires to be borne in mind when anything in the nature of training is undertaken.

The systems and methods of the modern school of trainers differ entirely from those of the old-time trainers of athletes. New ideas have been introduced into the art of training, and in no section of sport have they found wider expression than in training for cycle racing. This expression takes the form of a separate régime for every individual athlete, the individual's capacities and capabilities being considered in the course and extent of his training,—a very great change from the time when the trainer put every aspirant for honours on the racing path through exactly the same preparatory programme, a programme which, whilst occasionally successful with certain men, more often ended in the break-down and collapse of those submitted to it.

Until recently the athletes who came to this country from America underwent a much more intelligent and consequently successful course of training than was practised here; but experience keeps a hard school, and quite a number of English professionals are now under as careful and successful a system as any of their competitors.

The error into which most young riders fall is not too much, but too fast work. If we take a line from the course pursued in training horses for racing in great events we cannot go very far wrong; and no one ever heard, for example, of a horse in training for the Derby being sent the full distance every day at top speed throughout the whole of the season preceding the big race. Yet plenty of young cycling amateurs, when making their first essays on the path, ride themselves out night after night in training, not to mention two or more

severe races on the Saturday, with perhaps a mid-week meeting in between. What wonder that after a time they go stale, even if they do not suffer more ill effects from so drastic a course of treatment?

The men who successfully take part in cycle racing are the men who, within certain limits, take most care of themselves in training. Suppose such a one to have time and opportunities for training. His work, if he be of ordinary build and average fleshiness, will come out somewhat as follows. In the early part of the day, after some sort of a meal—for it is very unwise to ride on an empty stomach—he should repair to the track, and, studiously keeping his rate of speed down within moderate limits, ride for half an hour, in sufficient clothing, simply as a pipe-opener. During this half-hour's ride, when sprinting should be rigorously avoided, he may study the various points of position on the machine, ankle work, steering, and so on—in other words he may essay to acquire "form." He will improve faster if he be coached from time to time by an experienced friend who will watch him on the track. Once let a man acquire a good style, a comfortable position, and an easy and effective ankle action, and if he possess the qualities needful to develop pace, his pace will unquestionably assert itself. So this easy canter, this half-hour's spin, is really of quite as much importance to his ultimate success as the faster work which follows later. The young rider should finish with a careful rub down, properly administered by a competent attendant; and, if he has to go to business, in the usual course of things he will do well to take a shower bath, so as to guard against cold.

The day's business done, he may return to the track in the afternoon or evening, and take another short turn upon it, and upon this occasion he may for the moment discard form and style and put in one or two short sprints with the view of acquiring speed, and the mastery of his machine at a great pace. But here again a caution is necessary. It is highly inadvisable that his sprints should involve very hard work. They should be as a rule over a distance of about one hundred and fifty or two hundred yards, and before the wind for preference. In fact they should be calculated to give the rider the "knack" of speed. They will not in the ordinary course provide the muscles necessary to maintain great speed over relatively long distances. These are, for the most part, grown and developed during the slower and easier spins of the morning exercise: but it is well to bear in mind that the rider should not omit, from time to time, to run a trial against the watch, and force himself at top speed over something more than a fast quarter, and to engage in actual competition as often as he can within reason.

The adoption of this programme is very sure to cause the average amateur, in time, to develop whatever powers he really possesses. Then comes the time when it is worth his while to engage the services of a professional trainer. The professional trainer of to-day is, or ought to be, a very different being from the gentleman who held that position in the past. In his hands the rider who under a proper régime has secured a certain measure of success, may look for increased improvement, because there comes a time when a man will show but little advance unless an experienced attendant is constantly with him throughout the later stages of his training.

Diet is another point in which much alteration has taken place, and again within certain very clear lines the severity of the old rules has been very materially relaxed. A cyclist in training may eat and drink any plain viands or liquors which do not disagree with him—in moderation of course, and should be careful to take daily some amount of vegetables, and, in small quantities, fresh fruit.

G. Lacy Hillier.

BICYCLING FOR WOMEN—Only a few years ago bicycling was looked upon as a pastime quite unsuited to women. The tricycle was used by a few who felt they needed more vigorous exercise than could be obtained by walking or playing a quiet game of croquet, and were unable to provide themselves with the more expensive luxury of a saddle-horse. The advent of the drop-framed safety rendered cycling not only possible but pleasurable; and, with the addition of dress-guards, mud-guards, and pneumatic tyres, bicycling was brought within the reach of all. To-day it is the means by which health is restored and recreation afforded to an ever-increasing number. To many it is simply a pastime, such as was before afforded by tennis or croquet: but to others it is the only means of obtaining pure country air without the fatigue of long walks or the expense and trouble of a long railway journey.

It is curious that, despite the inherent love of sport which most Englishwomen possess, they should have been behind both the Americans and the French, who have set the fashion in wheeling. Now that we have discovered its charms we shall be slow to give it up, even when the present somewhat exaggerated craze for it has ceased.

Hygienic Aspects—With few exceptions the medical profession at first adopted an attitude of extreme caution with respect to cycling for women, regarding it with distrust, and discouraging it in every possible way; but now there is a distinct reaction in its favour, and only a few of the obstinately blind are found in opposition. There is no doubt that the bicycle has brought health to many a nervous, over-

wrought woman. All depends, of course, on the common sense displayed by the individual. The ordinary rules governing women's health must be applied in this, as in all other cases, unless serious injury is to result; but certain other regulations are also necessary for those not accustomed to sustained exertion. Experience is the school in which all of us must learn wisdom, and the pioneers of cycling have suffered many ills from the want of it. Their suffering has brought knowledge which is valuable to others who have followed in their steps. A system of diet and clothing which is perfectly suitable to a person putting no strain on her lungs or heart, whose muscles are soft and undeveloped, and whose skin has only responded to the enervating relaxation of heated rooms, is not only inappropriate but extremely dangerous to the cyclist.

The old axiom, that what you eat does you less good than what you do not eat is a safe one to apply; and if a woman wishes to do good work and profit by it both mentally and physically, she must resolutely turn from useless foods, which are incapable of replacing the waste caused by such active exercise as she obtains on her bicycle.

The rider must study her own idiosyncrasies, and never drive a willing constitution beyond its powers. Whatever women borrow from their capital of nerve force is only too apt to reduce their income of health for life. Bearing this in mind, women may derive enormous benefit from a form of exercise which increases the circulation, strengthens the muscles, develops the chest, relieves the lower limbs from the dragging weight of the body, and enables us to obtain far more fresh air than our powers would otherwise allow. No woman should ride if she has any serious weakness, except with great caution, and the permission of a doctor who not only understands her constitution but who has also made a special study of cycling in all its phases.

The different forms of hysteria, sick headaches, anæmia, and neuralgia, as well as imaginary ills, are specially benefited by this exercise. In the case of girls earning their own living and confined all the week in places of business, certain cycling clubs instituted on their behalf are a great boon. The members are taken in parties to various places of interest, and during their holidays pleasant tours are arranged.

Dress—The question of dress comes next in importance. Anything tight on any part of the body is quite inadmissible, and wool next the skin is absolutely necessary to prevent chills, with their manifold evil consequences. The wearing of the skirt is still a much debated question. England has never encouraged the extremely unbecoming attire worn by many French cycling women, and it is to be hoped never will. The skirt, if properly cut, helps to conceal the ugly action of the knees and legs, and never need be a cause of danger if fastened down by elastic straps, and not made too wide or too long. Of course, for professional riders, and women who cannot afford a well-cut skirt, knickerbocker costumes are the only alternative; but, for those who ride only for pleasure, a smart tailor-made skirt and coat (or blouse in warm weather) is the most suitable costume.

A woman's cycling dress should be, in the first place, practical—that is, composed of materials which do not suffer from rain or dust and will stand a certain amount of hard wear. The skirt should be about two and a half yards wide and gored, so as to fit closely round the hips, and put into the waistband in such a manner that it will be easy to arrange it so that it falls equally on either side of the machine. A moderately tight-fitting jacket looks neater than one of the loose "sac" shaped coats. Attention must be paid to the arm-holes, which should be large and easy, while the sleeves are best loose, but not so large as to flap in the wind. The important point about the head-gear is that it should fit well on the head so as not to be loosened and disarranged by every gust of wind, and that it be neat in appearance and not trimmed with flowers or feathers.

General Advice in Riding—In choosing a bicycle care must be taken to suit it to the height of the rider; adjustment of saddle and handle-bar being most important. The rider should sit erect, but not stiffly, and should, when once able to mount in the proper manner, have the saddle as high as can be comfortably ridden, as this gives greater power over the machine. A rider should always practise mounting and dismounting on either side, and be ready in case of accidents to put out a foot and so save herself from falling. As to the distance which a woman can safely ride, all depends on the special circumstances of the individual, the age at which she began to learn, her strength and constitution. While some can cycle seventy miles without fatigue, and can keep up a speed of thirteen miles an hour, others must limit themselves to a modest ten or twelve miles at eight miles an hour. Hill-climbing is a serious source of injury to many, and must be attempted with caution. For all, and especially for those who ride in skirts, coasting is dangerous. If any part of the dress should catch in the quickly revolving pedals a serious accident is likely to result. Racing is on all accounts to be deprecated for women.

On returning from a ride every article of clothing should be changed at once. After sponging the skin with hot water, followed by a cold douche and a thorough rubbing, fresh dry under garments should be put on. These rules strictly observed, all chills will be avoided, and the most delicate can derive nothing but advantage from an action of the skin which is one of the good effects of sustained exercise.

Cycling in Traffic is a vexed question; many consider it better for the weaker sex to abstain from doing so, but the matter really depends on the skill, nerve, and judgment of the rider. A woman who cycles in the streets of the metropolis or any other large city must learn the police regulations which prevail, and conform to them. She must not suppose her sex excuses her from doing exactly the same as others. Any act of courtesy on the part of cabmen and other drivers of vehicles should be acknowledged. A woman who has driven herself in town will naturally have an acquaintance with traffic, which will prove valuable to her as a cyclist, and will be aware that it is wiser in the long run to keep a whole skin and sound limbs, than to shave and scrape through narrow places at the risk of her life, and to the annoyance of other people. It is far easier and very often quicker to dismount and walk across a difficult crossing. There is nothing clever in wobbling about in the midst of a block of carriages and omnibuses, and causing drivers to use language which, though not pleasant for the ears of ladies, is perhaps excusable under the circumstances.

The numerous clubs which have been lately started for cycling women of all classes, have given them the opportunity of becoming expert riders, and also of seeing, during their club runs, remote parts of the country which are difficult of access in any other way. There is no doubt that, taken altogether, cycling has been one of the greatest blessings given to modern women. We can now scarcely realise that in years gone by delicacy was considered interesting, and that many girls would then have regarded it almost an insult to be called robust. That time has happily passed, and it behoves every able-bodied woman to look to it that she may be able to prove her strength and capabilities. For this purpose exercise of every sort in moderation and in the open air is necessary, and cycling will in future form an important part in her athletic education.

SUSAN, COUNTESS OF MALMESBURY.

DAB (*Pleuronectes limanda*).

MEASUREMENTS, ETC.—Length of head 4¼ to 5, of caudal fin 5¾, height of body 2⅔ in the total length. *Eyes*—the lower slightly anterior to the upper, diameter 5½ to 6 in the length of the head, ½ to 1 diameter from the end of the snout, and separated by a narrow osseous ridge. Lower jaw prominent: the maxilla, which is as long as the orbit, extends to beneath the first third of the eye. *Teeth*—a row of about 22 closely set, lanceolate on the blind side. *Fins*—the dorsal commences above the middle of the upper eye, the rays gradually increase in length to about the centre of their number (37 to 40) when they commence decreasing in height: the fin does not reach the base of the caudal, leaving an uncovered space equal to about ½ the height of the free portion of the tail. Pectoral as long as the post-orbital portion of the head. Ventral not joined to anal. A small spine, directed forward, at the commencement of the anal fin. Caudal slightly rounded. *Scales*—on coloured side with ctenoid margins, those between the eyes and on the cheeks smaller than those on the body. A row along each dorsal and anal ray. *Lateral line*—smooth: at its commencement it has a semi-circular curve above the pectoral fin, while it sends a branch over the occiput. *Intestines*—three or four short cæcal appendages. *Colours*—brownish, with some cloudy markings and spots: dorsal and anal fin, with whitish margins. Occasionally white spots are seen on the coloured side of the body.

Day's *Fishes of Great Britain and Ireland*, vol. II., p. 32.

DACE (*Leuciscus vulgaris*).

MEASUREMENTS, ETC.—Length of head 5¼, of caudal fin 5½, height of body 4⅔ in the total length. *Eyes*—situated slightly above the centre of the depth of the head, diameter ¼ of the length of the head, 1½ diameters from the end of the snout, and also apart. Suborbital ring of bones narrow. Body oblong and somewhat elongated, sides compressed. Cleft of mouth rather shallow, the posterior extremity of the maxilla reaching to almost beneath the front edge of the eye, lower jaw shorter than the upper. *Teeth, pharyngeal*—somewhat hooked at their extremities, 5, 2–2, 5. *Fins*—dorsal commences about midway from the front edge of the eye and the base of the caudal fin: the length of its base equals about two-thirds the height of the longest undivided ray, which equals three-fourths of that of the body below it: its last rays half the height of its front ones; upper edge of fin concave. Pectoral inserted in the lower fourth of the depth of the body, as long as the head excluding the snout, and pointed. It does not extend much more than half-way to the base of the ventral, which latter is inserted on a vertical line beneath the first few rays of the dorsal, and does not reach the anal. Front edge of anal in the commencement of the last third of the distance between the margin of the eye and the base of the caudal fin, the length of its base equals three-fourths of the height of its front rays. Caudal rather deeply forked. *Scales*—four rows between the lateral-line and the base of the ventral fin, where an angular one exists. *Lateral-line*—slightly concave, continued to the centre of the base of the caudal fin. *Colours*—bluish along the back, silvery white upon the sides and beneath. Dorsal, pectoral, and caudal fins tipped with black: the ventral and anal have merely a slight tinge of red or yellowish.

Day's *Fishes of Great Britain and Ireland*, vol. II., p. 181.

DECK SPORTS—Our survey may reasonably begin with **Deck Quoits**, for this pastime is at least as ancient as the century, and was played in the old ships of the line when Nelson won his laurels. Many generations of British tars have killed time with it, and thousands of travellers have sought the sport to destroy the monotony of long, uneventful days in mid-ocean. The game, as now played, admits of various methods of scoring according to the fancy of the players, but the practical part is only capable of three variations.

The quoits may be flung from a chalked line or mark—(1) at a peg, over which they must fall to score; (2) to a target of circles, of different values, chalked upon the deck; or (3) into a bucket. In the last case the range is much increased; but **Deck Quoits** proper, with a peg as mark, is a difficult game, not indeed admitting the science and variety of real quoits, but none the less requiring plenty of

skill. Four or five yards is quite far enough from the peg for beginners; and even at this range they will probably be much astonished to find how lengthy a task is the compilation of a dozen "ringers." The peg should stand about eight inches off the deck, and the quoits, which are made of stout rope, usually have a circumference of about sixteen inches. This, however, varies much with the fancy of the mariner responsible for their construction. The golden rule for all deck sportsmen is to win favour with a boatswain, and he will introduce them to the carpenter, upon whom much depends. As a ship's game, **Deck Quoits** is far removed from the first rank. Much practice, patience, and determination are necessary to play it well—qualities which no man ever yet brought to bear upon the game or ever will. Great accuracy is necessary to get on the peg, even at short range, and, with a high wind blowing and the ship lively, scoring becomes slow, and a good length almost impossible to keep.

Bull is another ancient pastime, which has this interest: that it may be considered a ship's game pure and simple, while most other nautical amusements are adapted or developed from a sport or exercise proper to *terra firma*. Bull seems to have been born and bred on the wave. The materials are a scoring-board about a yard and a half square, and quoits made of lead cased in leather. These should be somewhat larger than a crown piece; and they are flung from the hand to the board at any range agreeable to the players. Upon the scoring-board, which is covered with tarpaulin, are painted twelve squares with the numerical value of each written therein. The numbers range from 10 to 100, rising in each case by ten at a time, and the "100 square" lies at the top of the board between two unnumbered compartments of similar size. These two top corners contain either a capital letter **B** or, if the designer of the board was an artist, the representation of a bull's head. The concern is laid upon the deck, and its upper end propped up so as to slope the whole slightly. There are two methods of playing. By the first, a definite game—say of 1500 up—may be played. But the number must be exactly scored, and if a player passes "game" in his last hand and totals—perhaps 1540 instead of 1500—he is not out but must throw 40 in his next innings to reduce the score to "game." In attempting to do so he may very possibly fall below the necessary total; in which case yet another hand must be played until the exact number of 1500 is shown. Thus, though a man be leading by 1000 points, it by no means follows that he will win. If either player throws a **B** or **Bull**, or fails to hit the board altogether, everything scored in that hand is cancelled. The better and more popular game is known as "going round the board," a feat accomplished by throwing first 10, then 20, and so forth to 100. The left **B** is next played, and the right **B** completes half the game. The return journey is thrown in reverse order: from the right **B** back again to the 10 square. In this variety no penalty attaches to a miss, but a **B** thrown out of turn cancels the hand. At both games any quoit overlapping a line between the squares is ignored in the score.

The vitality of Bull is remarkable. It has not very much to commend it, and I never met a man who spoke of it with common respect, yet who has travelled in a passenger vessel which lacked a battered Bull-board amongst its resources for the idle traveller? Ladies, it may be noted, derive some pleasure from the sport, but before certain new games presently to be described, Bull must be doomed.

A better game is **Deck Croquet**, wherein a wooden disc is substituted for a ball, and weapons which may be described as a cross between a golf and a polo club take the place of mallets. The hoops can be arranged according to the facilities afforded by the ship, and a game involving plenty of skill is the result. **Shuffle-board and Deck Billiards** resemble the last-named pastime in some degree, though the "cue" for both sports is peculiar to itself, being a flat piece of wood fastened to the end of a broomstick, and having a half-moon shaped disc cut out of it to fit the quoit. These games, however, are now dying out before the greater attractions of one in some measure sprung from them. This infinitely better sport will presently meet the attention it deserves, for in my opinion it is the best ship's game ever yet invented.

Cricket as played at sea may be good fun on a big ship. The tethered ball variety is feeble sport and soon palls upon the most enthusiastic, but the bigger game, on a cocoa-nut matting pitch, with nets spread from awning to rail, can be played with pleasure and profit. Upon the "Castle" liners there is plenty of good marine cricket, and these great vessels carry special herring nets which, when rigged, give a very considerable practical pitch even with room for fielding. The Australians usually play a little cricket in mid-ocean on their way to this country, though it must be admitted that the highest professional praise won for the game is not great. They hold the sport is good enough to kill time, but deny that as practice for cricket it has any value. By way of a curiosity I may note that I have seen **Association Football** played aboard ship; but the game cannot be recommended.

Of the usual **Gymkhana** as practised on ship-board, much might be said, and the possible events may be multiplied *ad infinitum* according to the ingenuity and energy of those responsible for the sports. The programmes of course vary,

but from a dozen different ones it is possible to pick a series of athletic items which shall embrace every physical qualification of skill, speed, pluck, and strength in the performers, and of interest and amusement for the lookers-on. In a programme of this sort the promoters should be careful to arrange at least a couple of contests exclusively for ladies.

The following dozen or more events are always popular and never fail to command good entries.

Tug-of-war is a great marine pastime, and affords wide scope for a variety of different matches on any big passenger ship. The different classes of travellers may pull against one another, and against the ship's crew, or officers. An excellent contest is assured if every contingent on board enter a picked team of five men: and on a 'liner' the result should be a fine struggle contested by at least six or eight teams. I remember a Tug-of-war when the betting was all one way and yet the weaker team managed to hold its own in a manner as gratifying to itself as inexplicable to its opponents. The lighter men were unable to make the least impression on their foes, and yet the team backed to win, do all they could, did not budge the enemy a yard. Then it was found that the end of the rope behind the ultimate losers had been carried round the corner of a deck-house and made fast to a bollard by some enterprising sportsman. That mainstay denied them, the rout of the losing men was speedy and complete. The rules governing Tug-of-war are almost too well known to need repetition. A handkerchief is tied round the centre of the rope, and the rival tuggers take their places at equal distances from it. Upon the deck a chalk line is marked; the umpire adjusts the handkerchief on the rope exactly above it; and upon the word being given it is then the business of the rival teams each to drag the other over the line. The best of three tugs usually decides a match and, given a big entry, a "singles" Tug-of-war is also good sport. Sailors, it is to be remarked, possess a considerable advantage over average landsmen at Tug-of-war. They know exactly how to hang on to a rope with the greatest possible effect, and with their naked feet they have the knack of winning a closer grip on the deck than any land-lubber, despite his lawn tennis or gymnasium shoes.

Cock-fighting has not much to commend it from the performer's point of view, but a "main" will always command a good audience, for it is laughable to watch. Into a ring chalked upon the deck, and having a diameter of about three yards, the rivals are placed, having first been trussed in the approved manner. "Trussing" consists in seating the bird on the ground, then putting a walking stick under his knees. Beneath the stick his elbows are also linked, and he is bound firmly in this position. That a man thus crooked into a ball has not much fight about him is clear; but in the extreme helplessness of the combatants such fun as **Cock-fighting** possesses is to be found. The rivals are placed toe to toe, and the first to get the point of his boot fairly under his opponent's promptly topples the helpless foe over in a heap. He will probably fall pretty hard on the back of his head, and the winner's next task is to roll, shove, or hustle the prostrate "cock" out of the circle. In this endeavour he sometimes loses his own centre of gravity, in which case both performers are set up again to renew the struggle—if they have not had enough of it.

Slinging the Monkey or **Bowline Stretching** is another sort of horseplay very amusing to the spectator. The performer must allow himself to be triced up by the legs with ropes. He then swings head-downwards clear of the deck, which his hands are just able to reach. He is now given a piece of chalk and the game consists in his efforts to draw or write upon the deck. He may be directed to represent a pig or indite a love-letter at the fancy of his tormentors, and his efforts to accomplish the required task, especially if the ship is rolling free, are entertaining enough—to the looker-on. No man, however, "slings the monkey" twice.

Many of the ordinary fixtures at an athletic meeting can be happily carried through on a big ship, but you must order your Sports according to your craft. Thus only the shortest Sprint is possible, even on a big deck, and then no more than two runners should compete in each heat and ample room be allowed behind the tape. **Long** and **High Jumping** are both practicable, the latter especially so. A bundle of engineer's waste makes good material to alight on.

The **Hop, Step, and Jump** is similarly a capital sport: and no nautical Gymkhana is complete without a **Sack Race**; a **Wheelbarrow Race**, with human wheel-barrows; and a **Potato Race**, in which the spoil is scattered along the deck in fixed positions and has to be transferred, one potato at a time, to a bucket.

For ladies the **Egg and Spoon Race** is always popular, and the **Needle-Threading** competition not less so. The former is sufficiently well known: the latter generally requires the assistance of the sterner sex at the turning point of the race, where the needles are threaded. Here a man to each lady runner stands with a needle, and the competitors, as they reach the crucial point of the race, produce a piece of thread which each carries and pass it through the needle—a feat requiring delicate skill even in fine weather.

The **Obstacle Race** is the grand event of a

Gymkhana aboard-ship, and of this sport it may be said that a vessel usually offers a finer course than could be imagined or devised ashore. Jack is an absolute genius in such matters, and with the skipper's permission he will turn you out a course with complications and difficulties bristling at every few yards. And he will also teach you how to negotiate it. Swinging life-buoys or barrels, to be climbed through; a water jump, to be fallen into (for Jack takes very good care that C. B. Fry himself could not get over); floured sails, to be crawled under; hanging nets to be climbed—these are a few of the problems set for solution in an **Obstacle Race**, and such an encounter has this charm, that the whole course is within easy sight of the spectator.

The latest arrival among ships' games is a pastime patented in the autumn of 1896 by Messrs. P. B. Cow and Co., of Cheapside. Their original intention was to produce an athletic pursuit capable of being played within the narrow limits of the smallest garden, but "Spiropole," as the game is called, has now found its way to sea, and, under the alternative titles of **Tether-ball** or **Do-do**, took its first cruise last September in Messrs. Donald Currie and Company's new liner "Dunvegan Castle." The game may be contested by two or four players who take up sides, the partners facing one another at the four corners of a square chalked upon the deck. In the centre of this figure rises a stout post, ten feet high, and from the summit there hangs a tennis ball fastened by a strong cord. The players, who are armed with small wooden racquets, serve or strike off alternately, and the object of the game is for a player or players to wind the string holding the ball completely round the post. One side strike to wind it from their right to left, and the opposers attempt the reverse, which means that each side is bent on getting the string wound in an opposite direction to the other; the side finally completing the spiral scores a point, and the game is usually nine up. Only the ball must be hit by the racquet and should a player strike the cord, and thus foul the ball, his opponent will restart the game by taking the ball in hand and hitting off anew; but the cord must not be unwound from the position it then occupies. Should a player strike the ball over the line, or whilst it is in the adversary's court, the Umpire (and an umpire is very necessary) must add one point to the side which is thus unfairly assaulted. **Tether-ball** must be seen to be enjoyed, and played to be thoroughly appreciated. The wild vagaries of the flying ball, the futile efforts of the strikers to take it "on the wing," and the various comic surprises incidental to the sport cannot easily be described.

Last numerically, and to my mind first in importance, comes the game before alluded to as perhaps the best ever played aboard a ship. **Marine Golf**, though a ghost of the real pastime, is worthy of widest consideration as a sport at once novel, varied, and interesting. Much of course depends on the nature of your ship and the good-nature of your skipper, but given decks of reasonable size and an easy-going commander, who offers no objection to "putting greens," excellent sport is a certainty. The necessary materials are extremely simple. A round disc or quoit of heavy wood about $4\frac{1}{2}$ inches in diameter takes the place of a ball and, instead of a club, a fairly heavy walking-stick with a flat head, or handle, is used. The holes may be either a spot of chalk, to be covered by the disc, or a circle, about half as large again as the disc, into which it has to be played. Hitting will be found useless, and the stroke for drive, approach or put alike is a drag or push. On a smooth deck, with the wind behind you, a disc can be pushed 40 yards, which is a much longer stroke than any "links" save those on the biggest steamers would admit. For driving, the best position is to stand with both feet slightly in front of the disc; in putting, one foot in front and one behind produces the most satisfactory results. Unlike golf, the position of club and ball with regard each to the other being happily assured before the stroke is made, it is better in the act of striking to fix the eye on the distant spot where it is desired to bring your disc. "Links" may be much diversified so as to give opportunities for a variety of strokes and the display of much skill. The "cannon" is admissible, and sometimes a hole, which can only be played direct in two, may be achieved with a single shot by a cannon off bollard or grating edge. Such shots carry their special danger, and the loss of a "ball" by falling into the sea means a penalty, to be fixed according to the fancy of the players. In hole matches the hole is of course lost if the disc goes overboard; in matches by score two strokes should be the penalty. Holes soon get their own names, as on links ashore. One hole which I well remember was named the "Devil." It lay behind the mouth of a coal bunker and its proper number was theoretically three, but a man thought himself lucky to hole out in four. It was a heart-breaking hole in times of head-wind, for the effect of driving at a big wind when playing marine golf is peculiar. The disc in such a case promptly gets up on its side, stops dead, and then starts with the wind and rolls aft, its career being a spectacle of horror, terminating either in the scuppers, many yards behind the place from which it was originally struck, or in the sea.

A pitching ship generally means a head-wind and tribulation, both going out and coming in, to the marine golfer; but in beam seas, with the ship rolling not unreasonably, the perfection of the game may be seen.

At such times it is possible to reach directly

holes not so approachable on an even keel, and the most beautiful curved shots "round the corner" can be made.

Your disc of course takes a bias from the angle of the deck and will perform graceful and invaluable feats if you only keep your eye on the ship as she rolls, and wait for the right moment. I have seen astounding performances thus brought off, and holes made in one, by a combination of perfect strength and a sloping deck, that until the achievement were always voted threes.

Marine golf is rapidly developing its own terminology. To be "scuppered" is a condition of affairs which speaks for itself to anybody who knows a ship: while a "coal-bunkered" player can also be imagined without difficulty. The frequency of the "stimey" is rather a nuisance at the game, and the best rule is to make the player whose disc is nearest the hole strike first whether it be his turn or not.

A beauty of the game is the variation in condition of the "greens" and consequent unexpected difficulties in "putting." It might be supposed that a deck of bare boards was incapable of much change as to surface, but this is not so. Climatic conditions make tremendous differences, and a "green," so keen under bright sunshine that the shortest and slowest of puts goes too far, will, on a grey day, be as slow again; while if there happens to be any spray coming aboard the difficulties are still further increased, for you never can be sure in a wet place whether the disc will "drag" or "slide." In putting, the danger of a foul shot is as great as in pushing at billiards, and rules have yet to be made concerning the contact of disc and club over strokes of a yard or less. Indeed, the game is worth a complete code of rules, and when once taken in hand by a well-regulated golfing mind it should speedily eclipse all other pastimes afloat. I have witnessed its infancy, and unhesitatingly predict for it a phenomenal career.

Doubtless human ingenuity and high spirits bred of sea breezes, have, between them, produced many another excellent device for killing time on the ocean; but in my experiences, than those mentioned, I have observed no other sport, or pastime, worth recording or of a sort to make just claim to a place upon this page. Many of the games here set down are sufficiently trivial, but they serve to lessen the monotony of long days circled by the rim of the sea.

EDEN PHILLPOTTS.

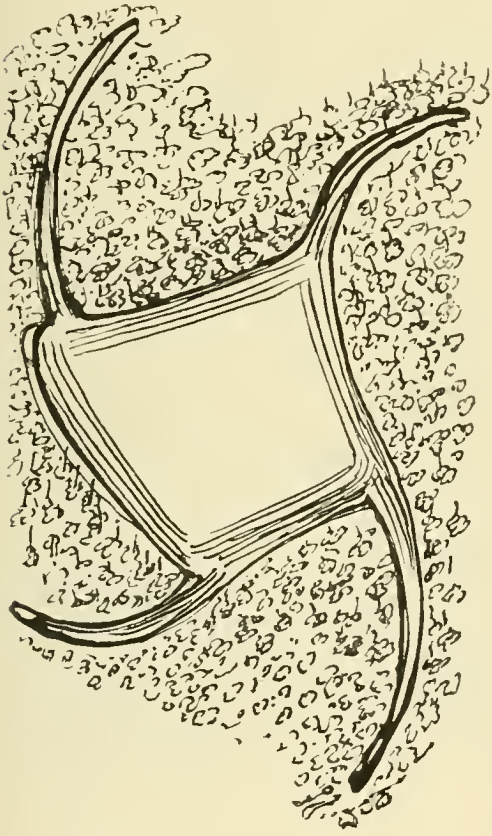
DECOYS—A decoy is a contrivance for taking wildfowl, introduced from Holland; hence the name, from the Dutch *eend*, duck, and *kooi*, cage. The earliest method of capturing ducks in this country, as described by Willughby (1678) and other authors, was by driving them into tunnel nets at a time of year when the young birds were unable to fly, and the old ones were moulting. This plan, which was in vogue as early as the reign of King John, and gave rise to litigation in Lincolnshire in 1280 and again in 1432, was found to be so destructive that in Henry VIII.'s time (1534) an Act of Parliament was passed to prohibit it. In the subsequent reign of Edward VI. (1551) the law was altered by protecting the eggs instead of the birds, and this protection was afforded to certain species of wildfowl, as well as game, by what is now known as the principal Game Act of William IV. (1 and 2 Will. IV. c. 32), which is still in force.

Another method of duck-catching, which, like "driving," has long become obsolete, was by means of a wire cage, which was worked with cords and pulleys and lowered on to a platform in the water, to which the birds were enticed by feeding. An example of this contrivance may be seen at Hardwick Hall, Derby, and a plan of it is given in Sir R. Payne Gallwey's *Book of Duck Decoys*, 1886 (p. 71). In this volume may also be found a description of a so-called "trap-decoy" (examples of which exist at Haughton, Park Hall, and Ossington in Nottinghamshire) whereby the fowl are captured "by lowering a trap-door at the entrance to the pipes after they have entered them for food placed therein."

The ordinary wildfowl decoy, however, as now generally understood, is worked neither by "driving" nor "trapping" but by "enticing" the birds up a wide-mouthed "pipe" (as it is termed), partly by means of a small dog, trained for the purpose, towards which they are attracted by curiosity, partly by means of decoy ducks which come at a call to be fed at the mouth of the pipe, and gradually lead their wild companions into it. Once within the pipe their retreat is barred by the decoyman, who, showing himself behind them, causes them to rush up the pipe into a bag-net at the further extremity, where they are then easily captured and killed. It is generally asserted, on the authority of Sir Henry Spelman (*Posthumous Works*, ed. Gibson, vol. ii. p. 153), that this method of decoying wildfowl was introduced from Holland by Sir William Wodehouse in the reign of James I. However this may be, the decoy constructed in 1665 by Charles II. in St. James's Park is apparently the first made in England on the Dutch plan, of which any account has been preserved. In that year, John Ogilvy, described as "Master of His Majesty's Revells in the Kingdom of Ireland," published a little book entitled *The Fables of Æsop paraphrased in Verse*, in which is a curious woodcut representing a decoyman taking fowl from the end of a pipe-net, by the side of a pool wherein the mouths of two pipes are shown. Sir R. Payne Gallwey, who has reproduced this engraving in

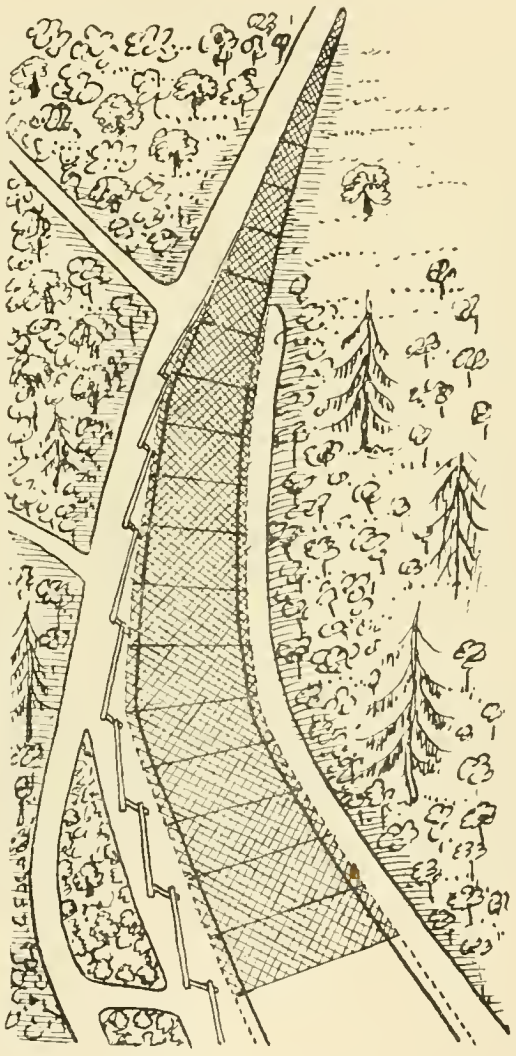
his work on Decoys above mentioned (p. 9), is of opinion that "this is the earliest sketch of a decoy and its pipes, as now used, in existence." In this, however, he is mistaken, for earlier engravings of the subject may be found, not only in the *Venationes Ferarum Avium*, &c., of Antonio Tempesta, 1605, and in the *Aucupationis multifariæ Effigies* by the same artist, 1639, but in a still earlier collection of engravings drawn by Bol and engraved by Philip Galle, 1582. (See *The Zoologist*, 1886, p. 382.)

Those who are of opinion that decoys in England are amongst things of the past may be



PLAN OF A DECOY POOL.

surprised to learn that at the present day there are about forty still in use in England, and three in Ireland, while at least 140 others are known to have existed formerly, and to be now dismantled or out of repair. The counties in which the greatest number of decoys once existed were, as might be expected from their proximity to the coast, Essex (29), Lincolnshire (39), and Norfolk (26). For the fourth place, Somersetshire vies with Yorkshire, each having possessed at one time no less than fourteen decoys in active operation. The reclamation and cultivation of the fens, the enclosure of waste land, the formation of railways, and the great increase in the number of shooters have each and all contributed to ruin decoys; while the large numbers of wildfowl which are brought by steamer and rail from Holland and other parts of the Continent every winter, render it less than ever necessary for the owners of decoys in this country to incur the expense of maintaining them. Moreover, in counties where game is strictly preserved for the purpose of being killed



PLAN OF A DECOY PIPE.

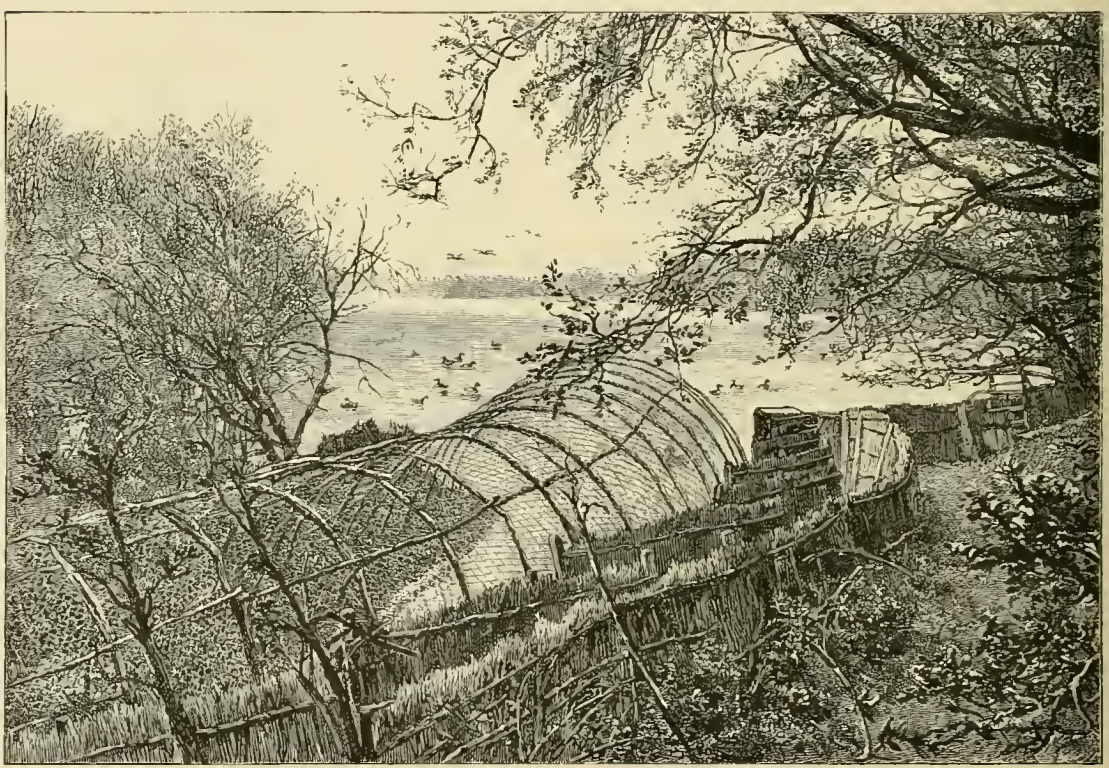
by shooting parties during the winter months, "decoying" is out of the question, since absolute quiet must prevail within sight and sound of the decoy pond, or no ducks will stay to be caught.

As regards the construction and management of a decoy, we have only to imagine a pool of a few acres in extent, lying in a quiet, out-of-the-way spot, far from any high road, and if surrounded by trees all the better. Marshes by

the sea, especially on the East Coast, are found to be most favourable for such a purpose, since fresh-water pools in such situations at once attract foreign fowl coming in from the sea on their first arrival.

Having selected the pool, the next thing to be done is to cut the "pipes," as they are termed, up which the ducks have to be decoyed. These "pipes," which may vary in number according to the extent and shape of the pool, are simply net-covered ditches of a peculiar shape, something like a cow's horn, that is to say, wider at the end nearest to the pond than in a sort of bag or purse, in which the fowl are eventually taken. As it is absolutely necessary that the decoyman should be concealed from view of the ducks on the pool, a series of screens, made of reeds and set one behind another in echelon, is fixed at intervals along the side of each "pipe." With a few tame ducks, taught to come at a whistle to be fed, a few handfuls of grain, and a small fox-coloured dog, the decoyman is ready to begin operations.

Selecting his "pipe" according to the direction of the wind, he throws a handful of grain over a screen into the pipe, and whistles. The



THE DECOY POOL.

at the other end, and gently curving throughout their entire length. The reason for having several such "pipes" to a decoy is that the fowl may be taken when the wind, no matter from what point of the compass, is blowing down the pipe towards the pond. The reason for making the "pipes" curved is that, if they were straight, and the ducks could see the further end, they would at once suspect a trap, and never enter them.

Three, four, or five such pipes are cut, and are arched over at intervals with hoops of wood (or iron, if expense be no object), over which is stretched a strong netting, tapering gradually towards the far end of the pipe, and terminating

wind carries the grain towards the mouth of the "pipe," the tame ducks come eagerly to feed, and the wild ones, getting an occasional mouthful as the grain drifts by them or towards them, gradually discover that the nearer they swim towards the mouth of a pipe the more plentiful does food become. Unsuspectingly they enter the wide mouth, so wide as to convey no suggestion of a trap, and then the decoyman's little dog comes into play. Taught to dodge in and out of the reed screens to fetch a piece of bread or biscuit, he shows himself momentarily to the ducks in the pipe, and disappears when returning to his master. Wildfowl are eminently curious, and their curiosity proves

fatal to them. They behave towards the dog exactly as cattle would do—so long as he retreats from them, they follow him. Perhaps from his colour they take him for a fox, their common enemy, and fancy they are driving him away. At any rate, they follow him up the pipe until, having passed the first reed screen, they are virtually cut off from the rest of the flock. At this juncture the decoy-man shows himself to the ducks in the pipe, though not to those on the pool. He makes no noise, but merely waves his arms; and the frightened fowl, afraid to return past him to the open water, instantly rise on the wing and fly up the pipe, following its curve in the vain hope that it will lead to freedom. Instead of that, however, it leads to the bag-net, from which one by one they are taken out to have their necks adroitly twisted.

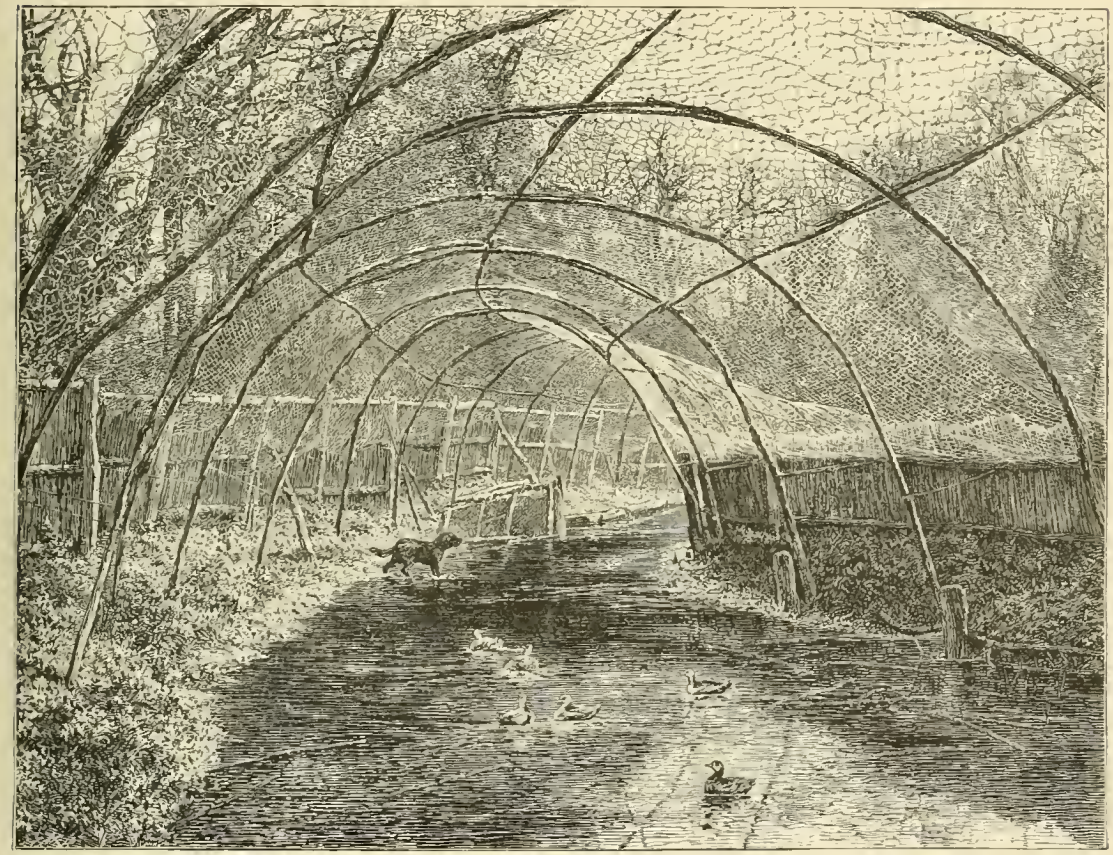
Such, briefly stated, is the *modus operandi*. The whole business is conducted so quietly that the wildfowl on the main water are never alarmed, and time after time the bag-net is filled and emptied.

In hard winters, when there may be several hundred ducks upon the pool in a day, great execution takes place if the decoy-man knows his work and has a good dog.

At a celebrated decoy at Ashby, in Lincolnshire, as many as 113 ducks have been taken at one time, and 248 in one day.

The following is a list of decoys at present existing in England, Wales, and Ireland. There are none in Scotland.

Bucks—Boarstall, near Thame.
Derby—Hardwick Hall, near Chesterfield.
Dorset—Abbotsbury, near Dorchester.



MOUTH OF A PIPE.

Essex—Bradwell Marsh, Tillingham Marsh, and Old Hall, Tollesbury.
Glamorgan—Park Wern, near Swansea.
Gloucester—Berkeley Castle.
Hertford—The Hoo, near Welwyn.
Lancashire—Hale, near Prescot.
Lincolnshire—Ashby, near Brigg.
Montgomeryshire—Lymore Hall, near Montgomery.
Norfolk—Westwick, near North Walsham; Southacre, near Swaffham; Wretham, Didlington, and Merton, all near Thetford.
Northampton—Aldwinckle, near Oundle; Borough Fen, near Peakirk.
Nottingham—Haughton, near Walesby; Park Hall, near Mansfield; Ossington, near Tuxford.
Pembroke—Orielton Park, near Pembroke.

Shropshire—Oakley Park, Broomfield, near Ludlow; Sundorne Castle, near Shrewsbury.

Somerset—Sharpham Park, near Glastonbury; Shapwick, near Sedgemoor; King's Sedgemoor, near Walton.

Suffolk—Iken, near Saxmundham; Chillesford, near Saxmundham; Orwell Park, near Ipswich; Nacton Heath, near Ipswich; Fritton, near Lowestoft.

Surrey—Virginia Water.

Sussex—Firle, near Lewes.

Warwick—Packington Hall, near Coleshill.

Wilts—Hampwork, near Downton.

Yorkshire—Hornby Castle, near Bedale; Thirkleby Park, near Thirsk.

Breast-wall screens—[*See* SCREENS.]

'Coy—The fowler's abbreviation for Decoy.

Decoy-ducks—Birds which are daily accustomed to be fed by the decoy-man in the pipe (*q.v.*), and therefore swim up without fear, followed by the wild ones. They are usually half-bred wild ducks.

Dog-jump—The low fence between two screens, over which the dog works. Usually about two feet six inches high, and of like width.

Draught of pipe—That portion of the pool which narrows to a bay at the entrance to a pipe (*q.v.*).

Drift—An attempt to draw the fowl up the pipe.

Elbow—The point at which a pipe curves.

Head-show—The spot at which the decoy-man

END OF A PIPE.

In Ireland at the present time there are but three decoys in working order, viz.:—

Cork—Longueville, near Mallow.

Kilkenny—Desart House, near Kilkenny.

Queen's County—Kellyville, Maryborough.

TECHNICAL TERMS USED BY DECOY-MEN.

Accommodation Tufts or Reed Edges—Small clumps of reed allowed to remain in front of the pipes (*q.v.*) for fowl to rest on.

Back Screens—[*See* SCREENS.]

Back-wing-landing—[*See* LANDINGS.]

Bank (*v.*)—Said of ducks coming to rest on the sides of the pool.

shows himself behind the ducks, in order to drive them further up the pipe into which they have been lured.

Hoop—The curved rods of wood or iron which span the pipe like arches and support the netting.

Landings—Smooth banks at the mouth of the pipe on either side; that on the inner curve being termed the *back-wing-landing*, that on the outer curve the *breast-wall-landing*.

Leading birds—Wildfowl that have been accustomed to rest in the decoy, and which, though not likely to be caught, are useful in attracting others.

Paddling—A flock of fowl on the water.

Pipe—The long curving net-covered ditch up which the fowl are induced to swim. The average dimensions are:—Height at mouth, fifteen feet; width, twenty-seven feet, gradually diminishing towards the end of the tunnel-

net (*q.v.*). The average depth of water is eight to twelve inches, so as to hinder the fowl from diving back. Length, about eighty yards. Birds which swim up under the netting are said "to pipe."

Piper—The dog whose actions attract the notice and curiosity of the fowl and allure them up the pipe: usually a small spaniel, but any little dog of a bright colour may be taught the work if intelligent.

Purse-net—[*See* TUNNEL-NET.]

Reed-edges—[*See* ACCOMMODATION TUFTS.]

Rising of the Decoy—The flight of the ducks from the pond about twilight when they leave for the marshes to feed during the night.

Screen—Fences of reed erected by the side of the outer edge of the decoy to conceal the decoy-man. Of these there are three kinds. (1) The *breast-wall screens*, two in number, covering the landing at the mouth of the pipe, eighteen feet and twelve feet long respectively. (2) The *working screens* round which the dog works, eleven in number, and ranged "in echelon," connected by the dog-jumps. The working screen nearest the mouth is usually about twenty-eight feet long, the others about twelve feet each. (3) *Back screens*, which conceal the fowler when running back to the mouth of the pipe. Of these there are three, each thirty feet in length. All screens should be about six feet high.

Stale birds—Fowl that have frequently visited the decoy, but have lost interest in the actions of the dog.

Tunnel-net, bag-net, or purse-net—The net at the extreme end of the pipe into which the fowl are eventually driven. It is detachable from the main portion of the net, and is usually about fifteen feet in length.

Yackoop—The dog-jump (*q.v.*) between the breast-wall screens (*q.v.*).

For hints as to the construction and management of a decoy the reader may be referred to the following bibliography.

J. E. HARTING.

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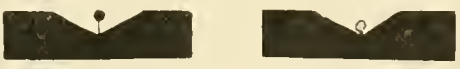
DEERSTALKING—This sport as now carried on in the Scottish Highlands is one that has changed but little since guns and rifles, bullets and villainous saltpetre first made their appearance on the hills; the weapons themselves have been improved, and have been coupled with the later advent of the telescope or spy-glass, but these are the only alterations that have taken place in the manner of carrying on the sport. The space placed at my disposal will not permit a discussion of the political or economical aspects of the deer forests, or the sport provided by each individual one: moreover, for the purposes of this work such a treatise would be unnecessary, and out of place, but those who are greatly interested in the doings of stagland will find in my books, *Deerstalking* and *The Deer Forests of Scotland*, further information on the subject. In this article I propose to confine myself to trying to tell the novice how best to carry on his sport, so that he may acquit himself creditably on the never-to-be-forgotten day of his first stag.

First, then, comes the rifle, and undoubtedly the single-barrel small bore of the present day is ousting from its pride of place the deer-stalker's old friend, the double-barrelled ·450. The Mannlicher ·256, and the Government ·303, adapted for sporting purposes, are the weapons of the future. With good reason too, for they are very much less expensive, have greater accuracy, no recoil, no smoke, less weight, and, where more than two shots require to be fired in quick succession, they are much speedier to use than our old friend the double-barrelled express. Provided, then, that the ammunition be of the right kind, and the cartridge made so as to *ensure* the "mushrooming" of the bullets, these small bores with their six cartridges, one in the barrel and five in the magazine, are at the present time the very best the deerstalker can carry. Moreover they are made so well that they will put a ball into a three-inch bull's eye at 100 yards. But whatever sort of rifle be used, on no account take one to the hill that has not stops to it, for there is nothing more dangerous to all concerned. As to the rifle sights, there are various descriptions in use, all of which are good: the most common is the V sight, and the more obtuse the angle of the V, the easier it becomes to use this sight for stalking purposes. Then there is the Layman sight, the bar sight, and the "nick" sight, and one of the four is generally used by the deer-stalker. The V sight has far the largest number of patrons, but it is easier to shoot with a "thick" sight of this description than a "thin" one. Cut A will show best what is meant by a "thick" sight, set exactly for a shot at 100



A B

yards, while cut B will explain what is meant by a "thin" sight set right for a hit at a similar distance.

Now, most men will find it easier to use sight A than sight B. Each will be "good" for a kill at from 80 to 120 yards, between which distances the greatest number of shots at deer are delivered. At nearer ranges, say from 70 to 40 yards, the A sight must either be seen much finer, if aiming at the heart, or held as in the cut and directed *well underneath* the heart. Now, in the B sight, in taking a shot at close quarters and aiming for the heart, the foresight, *to ensure a bullseye, ought to become well-nigh invisible*, and this is something very difficult to remember and put into practice in the excitement of a stalk. The light is often bad, and the shooter, longing to see a little more of his mark, raises his head, thereby making the thin

sight into a thick one. Then he has the mortification of hearing and seeing his bullet smack on the stones, or cut up the peat, quite true in direction, but *just over* the back of his quarry.

Those who are purchasing rifles, or who are not making good shooting with the one they possess, will do well to try the various sights in use, for peculiarity of vision and the distance of the back sight from the eye will often make a vast difference to those who are not doing well with the rifles they are using. Personally the writer could never shoot well at deer with either of these sights. He then tried the bar sight, which the annexed cut explains.

The inverted V is made of platinum, and the foresight of white enamel. For liberty of vision and quick aiming the writer has found this beat all other sights. Its very formation ensures, unless the shooter have "stag fever," that it be held straight; and the sight thus held (though one may, as with other sights, easily shoot under or over a deer through misjudging the distance), it is quite impossible to perpetrate the atrocity of "haunching him," so often occurring when the V sight is used, and not kept perfectly upright. The "nick" sight speaks for itself,

the nick above the inverted V of ivory or platina being exactly filled by the fore-sight at 100 yards. This sight, however, is not nearly so quick and ready to the eye for moving shots as the bar or the obtuse V sight.

The pleasantest spy-glasses to use are made by Ross, of New Bond Street, and, if money be of no great account, "the gentleman," as distinguished from the stalker, is advised to fit himself out with an aluminium one for his own special use. The difference in weight between that metal and bronze is well worth considering in a long day's tramping over the hills.

The power of a spy-glass is determined by the length of draw; for this reason binoculars are of but little use to the deerstalker, for if made with tubes of sufficient length to give power enough to distinguish a "royal" from a six-pointer at over a mile, they are so bulky to carry, and so liable by a chance blow to have the two tubes knocked out of the exact parallel, that, as far as the Highlands are concerned, binoculars are only used when a telescope is not to be had.

Rifle and spy-glass both being in readiness, let the deerstalker take the hill, clad in the most suitable coloured raiment for the ground over which he is to pursue his sharp-eyed quarry. It is as well to gain previous information on this subject, but if none is attainable, then the Black Mount, or Mar, "mixtures," or a light coloured "Lovat" will be nearly sure to be suitable. Colour is not of extreme importance unless it becomes, as is frequently the case, necessary to creep across a stretch of peat, or rock, or heather in full sight of a herd of deer only about five hundred yards distant. On attempting such a ticklish movement, the forester may often be seen to exchange his own coat with the ponyman or gillie, should either of them chance to be wearing one harmonising better with that special bit of ground.

Wear flannel shirts, and, if the ankles are sound, stout and well-nailed shoes with spats are better than boots. Stand fast to the old-fashioned knickerbockers instead of wearing the modern and smarter-looking knicker breeches, which do not permit of free play to the calf or the tendons under the knee. Have all pockets made to button up, which will often save the loss of pipe or tobacco-box, &c., for when it comes to slithering down a steep hillside at best pace, the coat pockets are usually nearer to one's ears than to that part of the body they are intended to cover. A neutral-tinted macintosh of medium material, cut like a covert coat, but looser and more roomy, is the best sort of wrap to take to the hill. It weighs but little, is easily carried, will be sure to keep both back and chest dry, and does not get appreciably heavier by the absorption of rain. Should your host place a forest pony at your disposal to carry you to and from your stalking ground, never on any pretence gallop it, for these ponies are, as a rule, entirely grass-fed, and are therefore in no condition for such violent exercise, and are easily made broken-winded. These animals can always be relied on implicitly on the darkest of nights, and however bad the track may be, if the rider will but trust them, he is sure to be brought safely home. With regard to personal condition, if plenty of golf and lawn-tennis has been played during the summer months, and hill-walking be not an entire novelty, most shooters will find themselves fairly fit at the commencement of the season, while each day on the hill will make them more so. The Swiss Alpine guides have a very good maxim, and recommend one "to start as if one never meant to get to the journey's end." Sound advice too, for there are many who find the first hour's walking the most fatiguing of the whole day. Therefore when, soon after setting out, a long and steep hill has to be negotiated, stop to admire the view the moment nature warns that too great a strain is being placed on the pumping powers of the heart. Many a good man has seriously injured himself by trying to "live" with a practised and well-trained walker during the ascent of a high and severe hill. I have on several occasions seen tall heavy men of splendid physique quite beaten, and distressed to actual sickness, if out of condition, towards the end of a long day when all chance of sport was over, as dusk came on and there remained a bad ten miles' tramp to the lodge.

In mounting a very steep hillside of rolling stones or "screggans," it will be easier and quicker to ascend crabwise, with feet and body at right angles to the slope of the hill. Also, should it happen, when making a dash down a steep hill to cut off moving deer or a wounded beast, that a slip be made, and the shooter begin to roll, then let him turn instantly on his face and stick the toes into the first thing they meet, which will usually bring him safely to an anchor.

Sometimes during September the weather is so close and hot, even on the high hill-tops, that the heat and hard work tend to make the stalker very thirsty, but in such a case let him not stop and take a cup of water at every spring. Resist the thirst, and by degrees it will vanish, or if very done up, kneel down at the first spring to be met with, and, holding the head low, let the attendant pour cold water over the nape of the neck, which will be found a wonderful refresher. If your own flask contains anything more stimulating than cold tea (that abomination!) carry it in your own pocket, for it is extraordinary how unfortunate some flask-bearing gillies are, for when carried in their pockets the very best made ones *will* leak! Carry a white pocket handkerchief; it will be useful for signalling to ponyman or gillie, and may also be further utilised to pin on your stalker's back during a tramp home across country on a dark night. Such signal being once hoisted, keep pretty close to it, and pull up short if it vanishes, when the chances are it will be seen reappearing from a burn or a hole into which the bearer has fallen headlong. A stout birch or hazel stick some eight inches longer than the Piccadilly type, will now complete the stalker's outfit. Should he wish to cut notches in this stick for every stag killed, why, it is a harmless amusement; but it is subject to the temptation, often overpowering, to cut a notch for an escaped and wounded stag, "sure to die" across the march.

It goes without saying that deer must be stalked up wind or on a side wind, so that they cannot get the scent of the stalkers. The actual distance at which deer will take the scent of a man varies according to the force of the wind and the conformation of the ground; when it is blowing fairly hard, it is certainly not safe to pass within a mile of a herd; and I once saw deer in a gale take the scent of a man and a pony (a stronger smelling animal than a man) fully a mile and a half off. As a rule, deer move up wind as they feed, and when alarmed, provided there are no adjacent sheep fences to head them, though they may gallop off down wind, they will surely circle round and eventually head up it. It should be borne in mind that the air currents in a narrow glen always move up or down it, although the true wind may be blowing directly across it; indeed the eccentricities of the wind are numberless, and it is a matter of daily occurrence to see masses of low-lying vapour rolling up with the wind to meet others advancing at a higher level from an entirely opposite direction. Therefore, when nearing deer, if there is a shifty wind which there is every reason to distrust, pull out the spy-glass, and try to make out which way the grasses are blowing at the point you wish to gain. Then, guided by the result of your observations, finish the stalk as promptly as possible.

In the middle of the day, deer usually lie down and will sometimes so remain for two or three hours, and nothing is more vexatious than passing such a period some hundred and fifty yards from them. The temptation to take a lying shot becomes very great, but it is far better not to do this, for deer are very easy to miss in such a position. A sharp shower will be nearly certain to cause deer to rise, so that they may shake the wet off them, and thus a ducking is often welcomed by those who have been lying a long time within shot. Thunder also frightens deer very much, and will frequently cause a stampede of several miles. If on a steep hillside, the biggest stags are usually nearest the base of the hill, with the smaller stags and the hinds above them. When lying in a position like this, most of them will be looking straight down hill, and of course, if there is a strong wind, they will be on the sheltered side of the valley. Then deer are nearly unapproachable; to get in from up wind and below is hopeless, while to attempt a down wind stalk, trusting to the force of the gale carrying one's scent right over the deer, is well-nigh as desperate, so that when deer are in a place of this sort, it is wiser to wait and watch their movements or to pass them undisturbed and look for others in more favourable places. Unless suspicious, or disturbed by grouse, fox, raven, &c., deer rarely look up hill, and for this reason it is always better to stalk down hill, and if the wind permits, manœuvre so as to get the sun at your back and in their eyes. In strong sunshine, with a dress suitable to the colour of the ground, a good stalker can take great liberties. In large herds, sentinel work appears to be deputed entirely to the hinds, and though the sight of neither hind nor stag is *marvellously* sharp, both are uncommonly quick at detecting any movement at close quarters. Deer startled early in the day will be apt to shift their ground further afield, and even when settled down again, will be far more restless than those disturbed at feeding time in the afternoon. Again, on fine calm days they will not move nearly so far as on cold days, with a strong wind blowing. Indeed, in very high winds, deer play fanciful tricks, and will start suddenly of their own accord and dash off full tilt for a mile or two for no discernible reason. On such days, unless the wind is in exactly the right airt for the ground, it is far wiser to stay at home and leave the forest quiet. In fine warm weather, the big

stags will mostly be on the highest hills, and on wet stormy days on lower ground. They are sharply observant of other creatures, and if grouse, fox, or other creatures have been disturbed by man, they know it at once, though if either one or the other is moving for its own convenience, they do not display the least sign of alarm.

About the beginning of the last week of September—the 26th is the precise day known as the "day of the roaring"—the stags commence to bellow and seek the hinds.

To me the roar has always seemed to be more of a love-sick than an angry sound, and although I have had many years of stalking, it has never been my good fortune to witness a combat *à l'outrance* between two big stags. That they do so fight is undoubted, and instances are recorded where the bodies of two stags have been found with horns locked together. I have at this period of the year seen many smart skirmishes in the forest, and often had a laugh at the quick way in which the lesser or weaker stag would find discretion the better part of valour, and turn tail after the exchanges of a few rounds had assured him of his antagonist's superiority. Many friends who have been associated with deer forests for years tell me that they also have never witnessed any duel to the death, and I am of opinion that encounters of this sort are few and far between. As the rutting season begins, the stags start on their travels, in search of hinds, wandering singly or in small companies, and as long as the wind keeps in one quarter, they will travel up it to very great distances. In fact, at this period, and with the wind in any one particular airt for a month or so at a stretch, a not very large forest may become almost denuded of its best stags, during all of which time the lessee will be gnashing his teeth with vexation, for he will know that there are sure to be sharp eyes on the look-out across the march. At this season also stags will travel by water as well as by land, for they are bold, strong, fast swimmers, and think but little of swimming a mile.

In starting out for a day on the hill let the "gentleman" make sure for himself that cartridges, coats, flask, lunch, pipe and tobacco are all with him, for in many parts of the Highlands it is thought to bring bad luck to turn back for anything after having once made a start. Especially let him see after his own cartridges, for I have known several instances of ·500 bore cartridges being taken out for a ·450 rifle, and the discovery not made until many miles from home with deer in sight!

As soon as the stalking party reach the first spying-place, out come the glasses, and the novice will not find it such a simple matter as it sounds, to search a corrie thoroughly. The best spying position is to lie nearly flat on the back with a rock or hillock to support the shoulders. Draw up the knees, fix the glass firmly against the inside of the left leg, and it can be held perfectly steady even in a high wind. Practice alone will make an adept at "picking up" deer, but absolute immovability of the glass is the first thing necessary to ensure success. It is as well to learn to use the glass with both eyes, and the ability to do so being acquired, then use the left eye if spying shortly before expecting to shoot, which does away with any fear of the shooting eye becoming "dazed." To use the left eye will feel very awkward at first, but practice will soon overcome that sensation.

When deer are lying quite still in broken ground, the beginner may often have the exact spot pointed out to him, and yet be wholly unable to find them. As soon as a shootable stag has been found, the novice must perforce put himself in his stalker's hands, but after a few shots and careful watching of the *modus operandi* he should be allowed the satisfaction of finishing the last two or three hundred yards for himself. Even in that short distance he will find himself making many errors and losing much valuable time in reaching a position, from which he may find it necessary to retreat, whereas if it had been left to the stalker he would, from his better knowledge of the ground, have been able to go straight to his quarry. Those few minutes gained often make just the difference between an easy shot and a difficult one, or perhaps no shot at all; nevertheless, the "gentleman" will have had more sport and fun if he takes the lead when nearing his quarry, and even if the worst come to the worst, and he put the stag away, that will be a lesson for a future opportunity. No great harm is done, and anything is better than being led about all day even by the best of foresters. To me it is quite wonderful how few sportsmen there are who stalk for themselves; and personally, were I able to rent a forest supposed to be good for, say, fifty stags, then I would rather kill but ten, alone and unaided, than the full allowance with the assistance of the professional stalker. There can be no doubt about it that many stags are missed by novices, through the stalker being the leading man at the critical moment of taking the shot.

When crawling uphill or on level ground, always advance head first; but in creeping downhill, let the feet go first: in very flat crawls, punt yourself along with the elbows, and be careful to keep the legs straight to the ground, for somehow or other in a creep of this sort they have a determined tendency to "cock up" and throw themselves above the level of the head. When crawling, hold the rifle across the body, keep close to the stalker if he is in front, and be *sure* to keep as *low as he does*, for one who knows his business will often only be an inch or two out of the view of

Red Deer

the quarry. It is unfair to him if you, by keeping a few inches higher, let the deer into the secret just at the end of the sport. With regard to this crawling or creeping, simple as it sounds, and painful as it often is, there is a right and a wrong way of doing it. Do not move as if "playing at bear" with children, for in that style, your tail will be a good bit higher than your head, which is a sight that deer will not stay long to admire. Keep nearly flat; place the hands far in front and well apart; stretch the legs at nearly full length; turn out the feet, and then, with knees barely touching the earth, you will acquire a crocodile-like motion to which you will soon get used. When moving in this way *the eyes*, with the exception of the very top of your head, become the highest parts of the body. As to "stag fever," neither whiskey nor advice will cure it; and the best remedy is a course of a few downright bad misses. In getting up to deer never crawl *over* a boulder or hillock or anything to bring you into the sky-line—creep *slowly round* all such obstacles, and you will rarely be detected.

We will now suppose the novice and the stalker are within shot of a good stag; they have crawled, slithered, run, waited, and done all that was possible to outwit their quarry, and the next minute will decide whether all their toil and trouble has been in vain. It is small wonder that anxiety should take possession of the shooter, for up to this time all responsibility has been with the stalker. He has done his work right well; and now will his "gentleman" follow the good example? In taking a first shot, remember you *must* at least show your head. Nor need you be afraid to do this, for it is impossible to make a good hit without fully seeing the object aimed at. But beginners are often so afraid of being detected that they will try to aim through heather or long grass. Very slowly, without any jerky, quick movement, bring the eye into sight of the quarry: and then, if the stag is standing broadside on, put the rifle-sights on the inside of his nearest foreleg; raise them slowly till they meet the body, and squeeze the trigger gently when you "see brown." This was the maxim of the late Colonel Campbell, of Monzie, and there was no one in all Scotland more able to give good advice on such a matter. Do not fire at deer standing end-on or facing you, but bide your time, and they will usually offer a fair chance. In shooting downhill, sit up by degrees; plant the heels firmly in the ground and rest *both* elbows on the thighs. Your rifle will be in vice-like rest, and far more steady than if only *one* elbow were rested. In uphill shots, seek for a big stone or tussock against which to rest the rifle, and put the left hand between the rifle and the rest, for if it be of stone there will be a "jump," and the bullet will not speed truly.

In firing at walking, trotting, or galloping deer, practice alone will tell how far to hold in front; and, in the event of a miss, be careful to note where the bullet struck. As a rule, at about one hundred yards, shoot right at a walking deer, for the bullet goes so quickly that even if it strike an inch or two behind the heart it will be fatal. At a deer trotting slowly, fire at the point of the shoulder; but at one stepping out at a good pace, just see daylight in front of him and then pull. For a stag galloping as fast as he can, from two to three feet may be "borrowed," and I think all shots at moving deer are better taken off the shoulder than from a rest. In down-hill shots, the aim should be a little under the heart; but in uphill ones, it should be rather over. In all shots, the cheek should be kept *well glued down* to the rifle-stock. If a long run has been made, and the firing and halting point are reached almost simultaneously, and exertion has reduced the shooter to panting, the rifle will be held more steadily if it is aimed and emptied in the few seconds between exhaling and again inhaling. No stag should be fired at if over two hundred yards away; but when the light is good, and he is broadside-on, he should be killed at that distance. The directions of the late Lord Lovat for judging the distance at which a deer stands from the shooter are so good and so accurate that, in the interests of my readers I cannot refrain from quoting them. Says Lord Lovat:—"Up to eighty yards the deer's eye is to be seen distinctly; at one hundred yards the shape of the eye is no longer discernible, but only the dark line is visible. Up to one hundred and fifty the ears are plainly to be seen, but at two hundred they are well-nigh invisible; so, unless the ears are distinct, it is better not to fire."

If you miss with the right barrel, do not empty the left in a hurry; take time to steady yourself, and then seize the first fair chance. Should that not present itself, it is better not to fire at all, for it is of very little use "loosing off" at deer end-on to you; but if you are unable to resist the temptation, then pitch the rifle-sight quickly in the centre of the horns directly above the top of the skull, and pull as if taking a snap-shot with a gun. Such a shot rarely comes off, but if it does the deer is killed stone dead, and all risk of "haunching" him is avoided. Should both barrels be emptied in vain, then, in the name of all that is sportsmanlike, do not sit down and open fire at random and as fast as you can blaze away. After missing with both barrels, keep as much concealed and as quiet as possible, but load again instantly in case the deer take a circle and offer *really* good second chances. If a beast drop to the shot, get up to him at once and as soon as possible, but reload before starting, and be *careful to put the stops on*. If the ball has gone high and just grazed the spine above the heart, but without breaking it, the stag will fall as if stone dead, and then in a few minutes he will recover himself and be gone. Nothing can be more vexing than to witness

this resurrection while the shooter is yet a good way off, for the chance then offered will almost certainly be an end-on shot, which usually results in a miss and the loss of the beast.

Now and again it happens, when stalking near the march and spying into Naboth's vineyard, that Naboth himself may be spied coming in pursuit of his deer. Then, if he has not seen you first, it is as well to sit down quite hidden and watch his proceedings, for if he has deer in front of him, he may possibly blunder and send them to you.

Perhaps the prettiest shot that can be given to a novice, and also one of the easiest, is cutting off deer feeding up wind, the *détour* of the stalker being so timed that, keeping a side wind, he arrives at the desired spot only a minute or two before the deer come feeding past it. A perfect knowledge of the ground and of the pace of the deer can alone insure success in this description of stalking, for if any one unaccustomed to it makes the attempt he is nearly sure to arrive at the selected spot *after* the deer have passed by, for when feeding they progress at a much greater rate than they would appear to. When this manœuvre is well carried out, it is most fascinating, for the shooter will be nearly certain to reach the firing-point hot and even breathless, but he has just sufficient time to settle himself comfortably and get a good rest, and then, while his blood is still "up," the deer pass slowly by. Hand and eye have had no time to grow nervous, and both combine to do him good service as he presses the trigger.

There is usually a mutual understanding known as "stalkers' law" on the marches of adjoining forests. The rule is that either party, finding deer on his own ground, but so close to the march that they cannot be stalked except by crossing it, may come over on to his neighbour's ground sufficiently far to hide his cap while crawling on hands and knees. At the same time it is best never to follow an injured beast across the march, and the usual plan is to send a letter to the owner of the adjoining ground, to tell him of the wounded one, and ask that his foresters be enjoined to keep a look out for it.

When a deer is palpably hit but recovers himself, remain hidden. Keep still and turn the glass on to him and try to see where he is wounded. He will be nearly certain to make for water adjacent to good cover, where he will hide himself, and if you can see him do this he should go to the larder, for he is usually an easy stalk when in such sorry plight. It is extraordinary how close a badly wounded stag will lie, and how cleverly, and in how small a hole he will conceal himself. When the surface is broken by watercourses and precipitous gullies overgrown with bracken and old heather, he will lie so close that he may easily be passed over. Therefore, if he has vanished in such sort of ground, every bit of it should be carefully searched, and often he will start to life within a few yards. Nothing is more annoying than to lose a good beast through not making a sufficiently close search at the moment, and then perhaps ten days later to come upon the spoilt carcass, likely enough not twenty yards from the very line taken when searching for him. It sometimes happens that a deer unsights you the moment the shot is fired. If he does, get as fast as may be to some spot commanding a view of the flying herd. If the stag fired at is not with them, he will, more often than not, be found lying dead, or so badly hurt as to be incapable of flight. A not very severely wounded stag, if he detect your approach, is nearly certain to become a lost one, for he will not rest again until he has gone a great distance, and rendered pursuit almost hopeless. If a stag be struck in such a way that he cannot rise and is yet very strong and full of life, especially if he is sitting up and has the use of his fore-legs, be very careful about getting within reach of his horns, for he will stab viciously and make furious efforts to avenge himself. Once only have I seen a wounded stag actually charge. He was hit high in the back (as it afterwards turned out, the spine was chipped but not broken), and as I ran with rifle in one hand, knife in the other, to give the *coup de grâce*, I plunged up to my hips in a bit of green and very soft ground when but fifteen yards from him. Turning my back to him to extricate myself, a yell from the stalker warned me only just in time to put in a snap shot, for the deer had regained his legs and with a furious rush was coming full tilt for his destroyer. He fell with his nose nearly touching me.

In shooting at deer brought to bay by a dog, great care must be taken that the neck of the deer and the dog are not in the same line, and, with an active dog bounding about in front of the deer's head, one will often be obliged to wait some minutes ere a safe shot can be delivered.

In most forests any stag scaling sixteen stone clean,—that is without heart or liver,—is reckoned a really good one, and it is very rare for a hill stag to exceed twenty-one stone. Wood stags often top this weight, and the heaviest red stag about which I have ever been able to get absolutely authentic information, was shot in the forest of Glenmore on October 2nd, 1877, by the present Lord Greville while on a visit to the late Earl of Stamford. It was a wood deer of eight good points and weighing *thirty-three* stone quite clean.

Stags usually stay with the hinds till they are three years old, when they quit the nursery and go off to join their big brothers in the high hills. One of the most remarkable features of stag life is the extraordinary rapid growth of the horns. These are usually shed some time in the month of March, and by the end of July are again

fully grown, though covered with velvet. A healthy six year old beast will in about four months shoot out some *twelve feet* of horns, for, measuring all the points of a royal head which I once laid low, I found that the total length of horn came to 140½ inches. During the month of August the velvet is shed and the horns begin to appear in all their wild and beautiful outlines, and this period having been reached, the stag is now fair game for the stalker and his gentleman, and should either of them have derived pleasure or profit from the perusal of this short essay I shall indeed be flattered.

AUGUSTUS GRIMBLE.

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DEERSTALKING IN THE CAUCASUS —The sportsman who wishes to add to his numerous trophies that of a Caucasian stag, must make up his mind that deerstalking in the Caucasus differs entirely from deerstalking in the Scotch Highlands, where the beginner usually gets his first shot. By the Caucasus is meant more particularly the Kouban district, which extends, northwards of the main range, between the Black Sea and the Rostov-Wladikavkaz Railway; for in this part, undoubtedly, are to be found the finest heads and largest animals of the kind. There everything seems in their favour: rich Alpine pastures above, long healthy grass below, dense virgin woods with tall fern undergrowth, and sunny glades in their midst, deep valleys with precipitous timber-covered cliffs on either side, and clear trout streams flowing at their bottom.

The reader can easily understand the complete difference between Scotch and Caucasian stalking. In Scotland, after a luxurious breakfast, you start, generally on horseback, with an experienced stalker at your heels, and sometimes with numerous gillies behind with luncheon baskets and deer-saddles; in the Caucasus, accompanied by half-wild natives, with a bit of bread and cheese in your pocket, starting from camp before sunrise and generally on foot, you have to toil up steep ravines for hours through dense underwood, through wild blackcurrant or raspberry bushes, stopping now and then to take breath, and to look up at the coveted ridge which seems as far from you as when you started. Then, picking yourself up, you continue your acrobatic performance over huge fallen trees that have been lying there for years and years, and into which you plunge knee-deep until, utterly exhausted, you reach a spot whence you "may" hear one of those magnificent calls which make your heart leap for joy! In Scotland your pony brings you to the high grounds, whence you begin spying and usually very soon discover several herds grazing on the other side of a corrie; you only have to pick out the best head, and sometimes wait till they feed towards an easier spot. If you score a miss, you generally get a second chance on your way home. In the Caucasus, owing to forests covering the greater part of the ground, telescopes are hardly of any use, and field glasses come in much handier. On reaching the timber line, or some place below it, you unsling your rifle, which has been seeming to you an eighty-ton gun, and finally sit down to listen. You may lie there the whole day without hearing a single call; or if you do, the stag may be at such a distance that you cannot possibly get back to camp before nightfall. If the animal is within reach, you may try the stalk and get within a hundred yards of him, yet never see him, for if a stray whiff of your wind (wind being very shifty in the Caucasus) reaches his nostrils, you will probably not catch sight of him at all; bending his head back so as to keep his antlers well out of the way, he will sneak off through the bushes without the slightest noise, as if he were not larger than a fox. I have been myself within thirty yards of a roaring stag, the wind as I thought being steady, and yet I could neither see him nor hear him go. Motionless I waited for a good hour after he had stopped calling, thinking he was still close at hand, while he was perhaps already miles away. My hunter, whom I had left some way off, told me afterwards that he had seen the animal come out of the brushwood in a crouching position, with his horns laid along his back, and make off in this manner till he probably thought himself safe, when he suddenly galloped away. On the other hand, the finest trophy obtained in the autumn of 1895 by one of our party was a twenty-one pointer (span 58½ in., girth between bez and

trez 8 in., rosette 11½ in., length along outer curve 44½ in., length of brow antlers 21 in., weight before cleaning 21½ puds, *i.e.* 53 st. 4 lbs.), killed while asleep at the distance of twenty yards! Another one that year, also a very good head, was bagged in the same way.

The Caucasian stag is a most capricious beast; in some seasons, as I was told by native hunters, he will not call at all, in others he will scarcely stop roaring the whole day, excepting between 1 and 3 p.m. during the greatest heat. One year, as I myself can testify, stags would not call properly, *i.e.* they would only call every half hour or so; the weather being very fine, the natives suggested that it was owing to the intense heat. Gradually the temperature changed from day to day until the ground was everywhere covered by a couple of feet of snow. Stags, nevertheless, did not improve their calling. We left the hills that year on September 28th, and

A Record Head.

very likely they began after our premature departure. Another curious fact I noticed one year was that although the roaring was fairly good at one of our early camps, for four or five days afterwards not a call was to be heard, although the weather was as settled as could be wished. Eventually they began again, but nobody could account for this interval of silence. From this it will be apparent that deer-stalking in the Caucasus can only take place during the rutting time, which usually lasts a month, beginning from the middle of September, although, according to the difference of seasons and other unknown factors—to the moon, as natives often say,—it may begin earlier, or end later. I have occasionally tried wandering about the woods in search of stags while they were not calling, and although numerous fresh tracks were to be seen everywhere, such as twigs and young trees stripped of their bark, or places where they had been scraping, although even the strong scent emitted during the rutting-time was perceptible, I never had the good luck to come upon one in this manner.

In winter, deer come down from high ground in search of food, sometimes to the vicinity of Cossack villages, where they are unsparingly slaughtered, hinds and all, by native hunters, who at that time of year have no other occupation, and are continually on the look out for them. They feed on the meat, make straps of the hide, and sell the horns, or convert them into dagger handles. An average of ten roubles (£1 sterling) is what they can get out of a stag, and for that sum many an inhabitant of the Caucasus would not mind dismissing his neighbour.

At the present time the localities where stags are most numerous are in the preserves of His Imperial Highness the Grand Duke Sergius Mikhailovitch, son of the Grand Duke Michael, formerly Viceroy of the Caucasus. His shooting grounds stretch over an area of 400,000 acres, taking in all the country north-westwards of the larger Laba, the main range being its boundary to the south. The sportsman would therefore have to look eastwards towards Mount Elbruz in the numerous parallel valleys of the Kouban tributaries. Unfortunately, unless strict measures be shortly taken, and game laws reinforced, deer will rapidly decrease, and perhaps soon entirely disappear, in the unpreserved grounds of the Caucasus.

While out in the Kouban district last year, I had ample opportunity to convince myself of the abundance of poachers, who mostly come over the main range from the Black Sea side, and deliberately shoot every animal that comes within range of their rifle; in fact I do not exaggerate when I say that I found nearly as many tracks of hunters in the woods as I did of stags. A friend of mine actually stalked a herd of Ibex simultaneously with one of those poachers who was approaching the same herd from a different direction, and eventually got the first shot. Government foresters themselves, buried as they are in those wilds, have the right of shooting any beast they come across for their living, and, distances being out of proportion to their number, they cannot possibly stop unlawful proceedings. Moreover, with the view of encouraging horse and cattle breeding in the Caucasus, an Ukase of the Emperor has given natives the right, in consideration of a small tribute, to turn all their horses, sheep and cattle, during the summer months on to the Alpine pastures. At the head of every valley a large brown patch on the grass denotes the presence in the neighbourhood of a few thousand sheep and several shepherds, who not only make noise enough with their songs, but also bring their wretched guns and occasionally wound an animal, which goes away to die, perhaps at some distance. This being the case, the stags are evidently frightened out of their wits by the noise and constant traffic, and consequently will only roar—if a few grunts can be called roaring

—at night time, taking the greatest precautions, and ceasing before 4 a.m.; in the daytime not a sound is to be heard from them. I noticed this fact in the autumn of 1896, when we camped six weeks in the hills during the best time and never got a single shot, but of course it may have been an exceptionally bad year. I have remarked that as a rule during the rutting-time Caucasian stags are most likely to be found in glades just under high wooded ridges, or among willow trees on the timber line; but I have also often heard stags call low down by the streams, or half way up steep banks of ravines.

Shells, tin horns, and other instruments are frequently used for calling stags, though natives never employ anything but the dry stems of large *Umbelliferæ*, from which they cut a short thick cylinder, and with it imitate very successfully the stag's call.

Excepting on the Grand Duke's grounds, where a numerous staff of "jägers" strictly protect the game from incursions of poachers and keep down vermin, including bears, of which they destroy an average of seventy a year, stags are growing very scarce, and the sportsman who succeeds in getting two or three shots during the whole rutting season, may consider himself fairly fortunate. But then he may obtain a trophy of which he may be justly proud! As already stated, the largest and finest heads are to be found in the district about Kouban. There are said to be large deer in Daghestan, but I have never seen a really good head that was procured there. I have shot a good twelve-pointer to the south of the main range in the Borjom District, but there can be no comparison with our Kouban trophies of 1895, amongst which, for instance, six out of seven heads measured above 45 in. in length and above 7 in. in girth between bez and trez tines, most of them being 14 and 16 pointers. These were shot in the Grand Duke's preserves. The keepers told me that in winter they often see herds of from 15 to 20 head lying on the snow, 24 pointers being not uncommon amongst them, and the size of the antlers of unusual dimensions.

I always rely on the experience of native hunters to judge a stag by his voice, and am inclined to believe that they are rarely mistaken. What I noticed was that loud, frequent calls seldom denote heavy old animals, while low deep grunts, cautiously delivered and hardly perceptible at a great distance, are generally emitted from the throat of a "royal." Locating the sound, especially of the latter, which is singularly ventriloquial, is not an easy task. It requires a great deal of practice and knowledge of the ground, every boulder changing the direction of the sound. Moreover, Caucasian valleys being very deep, with steep lateral hollows, and very precipitous cliffs, the echo is naturally greater and more apt to puzzle one. I have several times been a victim of this deceit. I remember once, after a hard day's crawling through fallen timber, towards evening I suddenly heard a loud challenge, at what I considered a hundred yards below me; so crept down cautiously in the direction of the voice! As I approached, the calls seemed to come from further and further till they completely ceased. Having reached the bottom of the ravine and the place being clear of trees, I looked around me, but seeing no signs of stag, and light growing dim, I was about to give up the chase, when up started a fine old beast twenty yards off, from behind a thick stump.

My companion explained to me that this stag had been probably standing when his voice had seemed so near to us, after which he lay down behind the stump; this was enough entirely to alter the direction of the sound and make us think that he had gone at least 500 yards away.

The inhabitants of those parts of the Caucasus are either Cossacks, Russian settlers since the Caucasian War, or regular natives belonging to different tribes; all Mahommedans having been for centuries under Turkish dominion. When passing through a village your guide will unfailingly say, either "This is a Cossack Stanitza" (village) or "This is an Asiatic one," meaning that it is inhabited by Russians or by Mahommedans. This classification of natives in two groups is plainly marked by a difference of language and altogether different customs and mode of living. These peculiarities are pointed out in order that the sportsman who intends to camp-out in the hills for a month may see the necessity for choosing reliable companions. "Asiatics" are undoubtedly the laziest and most unwilling creatures imaginable, but on the other hand they are better mountaineers than the Cossacks, and make up the contingent of native hunters. The dilemma may be solved by taking out Cossacks for camp work and Asiatics for hunting, although you can never be sure that they will not refuse to follow you. On our last trip we actually had to hire a cook for our Asiatic staff, otherwise they refused to go. These fellows being inveterate thieves, precaution should be taken to keep one's goods constantly under key. Their ponies are considerably better: as durable as can be, accustomed to hard mountain work, the deepest ridges being accessible to them. Their regulation load is 200 lbs., though their proprietors never cease to grumble, insisting that they are too heavily laden. One rouble (2*s.*) a day for a man, and as much for each horse, is what I have generally paid, though, to judge by their satisfaction, it is probably too much; the same fee for the hunters with an occasional tip at the end according to behaviour. One man usually leads two ponies: our attempts to make them take three ponies each were unsuccessful—in fact we were nearly induced last year to mount

the men, the district "Ataman," or chief, having told us that they would never consent to go on foot!

From London *via* Vienna eighty hours will bring you to Odessa, whence ships sail twice a week or more to Novorossisk, and another eight hours will carry you to the Rostov-Vladikavkaz Railway, whence one can branch off for the hills at Armavir, Nevinomisk, or any other station in the neighbourhood. There are plenty of villages at the foot of the hills where one can find some sort of lodging, and ponies may be obtained everywhere. The best stalking grounds beyond the Grand Duke's preserves are the Urup and Zelentchuk Valleys up to the main range, though they will probably be preserved within a short time. The sportsman will then have to try the valleys eastwards, viz. the Teberda and Aksaout Valleys, which hold not only stags, but also Ibex, especially towards the sources of their tributaries, such as the river Marko and others.

Regarding the battery to take out, every sportsman has of course his own ideas on the subject. It is impossible to point out why a Mannlicher is better than a Mauser, or the latter worse than a ·300 Express. Some prefer one pattern, some another. For my part I have invariably taken out with me a pair of Purdey's ·303's, double barrelled and hammerless (which have proved very useful at long ranges), as well as a ·450 magnum Express for stags.

I have never been able to make up my mind to shoot the large Caucasian stag with a ·303, and yet it is beyond doubt that, if hit in the forepart, the stag will fall as well to a ·303 bullet as to a ·577 one. The ·303 has the advantage of a flat trajectory and therefore possesses greater accuracy—and long shots are often required; yet I cannot help thinking that it is too small a bore for so large an animal. For Chamois, Ibex, or Mouflon, it is an invaluable weapon, the ·450 magnum doing well for deer.

In conclusion I may observe that although sport may be difficult, game scarce, and autumn weather showery and cold, it is nevertheless a most enjoyable trip, if only patience be rewarded by some fine Caucasian trophy.

E. Demidoff Prince San-Donato.

DOGS—Although much ingenuity has been displayed in endeavouring to prove the origin of the domestic dog from various crosses between so-called wild dogs, wolves, foxes, &c., the matter is still one of supposition. The dog (*canis familiaris*) is a natural development, and the varieties were produced primarily by accident, by selection, by the surroundings under which they have lived, such as climate, food, training, &c.; and latterly by selection only. All facts and researches prove that in various parts of the world and in various ages, different species or varieties of the wild *canidæ* were gradually brought into a state of domestication, and therefrom the dog, as we know him now, has been developed—a process which has taken many thousand years to perfect.

Only **Sporting Dogs**, or such as are used for the purposes of giving amusement to their owners, or for providing them with food, are dealt with here; and no doubt this "sporting division," if it may be so called, is much older, and dates much further back, than such animals as are used for pets, even than those which have been trained to guard the flocks, or used as beasts of burden, as food, or in the many other duties in which they have been found valuable. Primeval man had his dogs, semi-wild creatures no doubt, but they assisted him in the chase which was to provide him with food. When more domesticated, they were taught to guard the sheep and cattle. At the present time it may be noticed that in the uncivilised countries the dogs still remain semi-domesticated: at the same time they more closely resemble what the original dog must have been than do any of the varieties of the canine races of Great Britain and of other civilised countries.

The original dog was somewhat wolf-like or fox-like in appearance. He had a close, woolly, weather-resisting coat. By cultivation and by a change of living, this coat gradually changed until it became almost smooth. At the same time pace was developed in order that the wolf and the stag could be caught; and to obtain this pace and power a gradual evolution took place, so that in some of the more civilised countries the dog became hound-like, or similar in shape to the modern greyhound. Thus, most of the Assyrian sculptures, which are three or four thousand years old, represent dogs of this type. Some few are stronger and more massive, bearing a resemblance to the old English mastiff strain and that of the German boarhound. The longer-coated dogs are an unnatural development, caused by crossing and inter-breeding from the smooth dogs which have had a tendency to grow long hair. These long coats are purely of such manufacture; in many cases they are not sufficiently close to be weather-protecting, but are rather ornamental than useful. The natural weather-resisting coat was, and still is, close, thick, soft, and more like flannel in appearance, and to the touch, than anything else. This kind of coat will be developed on any smooth-coated dog kept in a cold damp kennel, or allowed to sleep out and rough it as his progenitors had to do. The *Hounds*, which include such dogs as hunt on the ground and do not feel for the taint of scent in the air, are perhaps the most important group, and many varieties of them have been produced in various countries.

Cropping—This is cutting the ears of dogs in order that they may stand erect in a point, or entirely removing the ears on an animal used

Just Breaking

for fighting purposes. Happily this cruelty, seldom perpetrated upon sporting dogs, has been discontinued in this country. It however prevails elsewhere. In 1895 Robert Carling and his wife were sentenced to a term of imprisonment for cropping an Irish terrier; and following this the Kennel Club decided that no dog, if cropped after March 1895, can win a prize at a show under their rules. So far as Irish terriers were concerned a similar rule had, at the instigation of the Irish Terrier Club, been passed, the date being after December 1889.

Dew Claws—These may be removed or allowed to remain; they are however unsightly and liable to be troublesome to the dog when working. They occasionally appear upon the front legs as well as upon the hind ones. In their removal a pair of strong, sharp scissors are required, and the operation is best performed when the puppy is about three weeks old and suckling on the dam, whose tongue will soon heal the sores.

Docking or Tail Cutting—It is the custom to shorten the tails of certain dogs in order to prevent injury thereto when they are hunting in coverts and thick undergrowths. The spaniels and German griffons undergo the operation, which ought to be performed in early puppyhood, when a fortnight old, when with the dam. The hair should be turned back, and about one-half the tail taken off with a pair of sharp scissors. The practice once obtained of biting off the tail with the teeth.

Dog Clubs—Dog clubs were formed to look after the interests of the dog, especially in so far as their show career is concerned. The first Club was the *Kennel Club*, established in 1874. It seeks to occupy in the kennel world a similar position to that occupied by the Jockey Club with relation to the Turf. The entry fee is five guineas, and the annual subscription five guineas. It publishes annually a stud book, monthly a journal called the *Kennel Gazette*, and besides its ordinary members has "Associates," who are admitted at a much reduced fee. The latter are not allowed the advantages of the Club house. The Kennel Club holds a show each year, and every dog exhibited thereat, or at any other show in which their rules are enforced, has to be registered, the fee for which is one shilling. Mr. S. E. Shirley, Ettington Park, Stratford-on-Avon, is the president of the club, and Mr. W. W. Aspinall, 27 Old Burlington Street, London, W., the secretary. There are also the Scottish Kennel Club, the Irish Kennel Association, and the Ladies' Kennel Association. The two first-named have no particularly distinguishing feature, but hold shows annually. The last also arranges a show at which only ladies can exhibit. It has a Club house at 5 Great St. James Street, Bedford Row, London, a monthly magazine called the *Ladies' Kennel Journal*, and it looks after the interests of all dogs with which ladies are concerned. Mrs. Stennard Robinson is the secretary. Then there is the old-established National Society for the Improvement of Sporting Dogs, whose headquarters are at Shrewsbury, and which holds field trials annually. The more recently formed International Pointer and Setter Society is conducted on much the same, though perhaps on more inclusive, lines. Most varieties of the dog have specialist clubs, some one, others more. The Fox Terrier Club (which publishes monthly the *Fox Terrier Chronicle*), the English Setter Club, the Irish Setter Club, the Spaniel Club, the Sporting Spaniel Club, the Deerhound Club, the Beagle Club, the Irish Wolfhound Club, the Borzoi Club, the curly-coated Retriever Club, the Dandie Dinmont Club, the Scottish Terrier Club, the Welsh Terrier Club, the Irish Terrier Club, and the Airedale Terrier Club are the most important. There is also an Association of Bloodhound breeders. The subscriptions vary in amount from five shillings to twenty-one shillings annually. The oldest of the specialist clubs for sporting dogs is that for Fox Terriers, which was instituted in 1876, whilst the youngest is the Sporting Spaniel Club, established early in 1897. There is also an American Kennel Club and similar establishments in France, Russia, Germany, Belgium, and in other continental countries.

Field Trials—These are trials instituted for the improvement of sporting dogs—pointers and setters in particular. Retriever trials were run at Vaynol Park in 1871–2, but have since been discontinued. In America, beagle and spaniel trials take place, but here they have not yet been tried. Field Trials for pointers and setters are amongst our most important sporting functions. In 1896 five such meetings were held, viz., by the Kennel Club, by the National Association, and by the English Setter Club in the spring over partridges; by the International Pointer and Setter Society, and by the Irish Setter Club in the autumn over grouse. The first four of these are, at any rate, likely to be continued annually. The work done by the dogs on these occasions is generally of high class — nose, pace, natural ability, training, staunchness, style, quartering and beating out the ground, game-finding, and general behaviour being taken into consideration by the judges who make the awards. The first Field Trial meeting ever held in this country took place in April 1865, over Mr. W. H. Whitbread's Bedfordshire estate at Southhill. In 1894 an autumn meeting was held over the late Mr. Heywood Lonsdale's shootings in Scotland, and with this exception all the field trials have taken place either in the Midland or Southern counties, in Ireland, or in Wales. Similar gatherings are held on the Continent and in America.

Licenses—In England, Scotland and Wales

the license for each dog is *7s. 6d.* Puppies under six months old, dogs used solely for the purpose of tending sheep and cattle on a farm or owned by shepherds, and such as are used by blind persons for their guidance, are exempt, but application for exemption has to be made to the local authority. In Ireland each license is *2s. 6d.*, and in the Isle of Man one guinea.

Muzzling—The Board of Agriculture and local authorities have the power to issue compulsory orders compelling all dogs to be muzzled, under certain penalties. When such orders are issued, they are only in force in that locality in which the authority has jurisdiction; but the Board of Agriculture can issue an extended order, which takes precedence over anything local. Other local orders may be issued, the most important of which makes it compulsory for each dog to wear a collar upon which the name and address of his owner is legibly inscribed. A system of registration has been adopted in Glasgow, where each dog has to be licensed, and when the license is obtained, a metal tablet is purchased which bears a number corresponding with that on the license. This tablet has to be worn on the dog's collar. At the time of writing this (1897) some alteration in the general licensing system of dogs appears to be pending, but so far the "regulation" wire muzzle is required. In districts where the muzzling order is in force, exemptions are made with regard to hounds and to other dogs when actually being used in sport.

Registration.—The Kennel Club has adopted a system of registration; the fee is one shilling per dog, for which the owner is entitled to select a name not already appropriated, and this is duly published in the *Kennel Gazette*, the official organ. No dog can compete at any show held under the Kennel Club rules unless it has been previously registered. There is an additional fee of 2s. 6d. to pay when the owner of an already registered dog wishes to change its name. A bitch lent for breeding purposes has to be duly registered with the Kennel Club, the fee for this being 5s.

Shows—Since their first institution at Newcastle-on-Tyne, June 28—29, 1859, when there were sixty entries, dog shows have become an institution in the land. The first show was confined to pointers and setters; a leading show at the present day may have anything from a couple of hundred to four or five hundred classes, and include upwards of seventy varieties of the dog. Birmingham has always held a great show, and it is the oldest of modern fixtures, having been established in November 1859, and held annually ever since. It is called the National Show, and a win thereat is considered the blue ribbon of the canine world. Equal to Birmingham, and even larger, is that show held by the Kennel Club, which now seems to be fixed at the Crystal Palace, Sydenham. This club has now held shows of its own since June 1873, at the Agricultural Hall and elsewhere. Until 1895, it was the custom for the Kennel Club to hold two shows annually. Edinburgh, Manchester, Liverpool, Darlington, Brighton, indeed almost all our large centres, hold or have held exhibitions of dogs, whilst private individuals have been successful in a similar manner. Mr. C. Cruft, at the Agricultural Hall, Islington, by liberal classification, has obtained enormous entries. The greatest number of dogs ever "benched" at any show was at Islington in 1863, when, with only seventy-three classes provided, 1,678 entries were obtained. Many of these entries included braces of pointer and setter puppies; couples and three couples of hounds, harriers and foxhounds, swelling the total number of dogs to about 2,100, a record which has not been reached since, although the classes are now more than quadrupled. In those early days no dog was allowed to compete in more than one class; now the arrangements are such that exhibitors are encouraged to enter one dog in as many classes as possible. The entry-fees are higher now than then, and with the exception of challenge cups, which are not for open competition, the individual prizes are lower than formerly, although more of them can be won. Another important show is that for foxhounds, harriers, and beagles, annually held in summer at Peterborough. Some of the specialist societies arrange shows of their own, those under the auspices of the Fox Terrier Club being the most important, and that body has held one or more shows annually since its establishment in 1876. Other clubs, not wealthy enough to run their own specialist gatherings, give extra support to the more comprehensive exhibitions. It may be estimated that about four hundred dog shows are held in the three kingdoms annually, many of them, however, of but local interest, whilst others take place in connection with the district agricultural societies.

Trimming or Faking.—This is a common but dishonest practice performed on a dog to make it appear better than it actually is. So far as sporting dogs are concerned it is confined to the removal of the coat by plucking when it is too heavy, curling and pulling curly coated retrievers, wetting the coats of the latter and singeing, rubbing, or in other ways "doctoring" a pointer's tail in order to make it look finer and smaller than nature had intended it. Cases have been known where tails have been "nicked," or cut underneath to make their carriage more perfect, and it used to be the custom to cut underneath the ears of some terriers in order that they might "drop" in the fashion required. When the latter is required now, plaisters and weights are used when the dog is young, and being continually worn give the ears a downward carriage. There are special rules of the Kennel

Club which deal with this matter, and they make cutting, singeing, damping, oiling, plucking, &c., disqualifications.

Hounds.

Beagle—The beagle, though varying much in size, is, generally speaking, the smallest of our hunting hounds, and is divided into many varieties. There is the "Kerry Beagle," a large black-and-tan hound, which has been kept for many generations near Killarney and in other parts of Ireland. The only pack now existent is that of Mr. Clement Ryan, of Emly, co. Tipperary. The Kerry Beagle is not unlike a miniature bloodhound, and is generally from 22 inches to 24 inches in height at the shoulders.

The beagle proper is usually hound-marked and "blue-mottled," the latter a very pretty colour; it should not stand more than 15 inches in height at the shoulders. In addition to the Kerry Beagle already alluded to, there are some smaller hounds of about 14 inches, black-and-tan in colour; there are others, very rare, fawn or wheaten in colour, with hard wiry coats. When classes are provided for beagles at our dog shows, they should be sub-divided into such as are between 12 inches and 15 inches in height, and those below 12 inches. The smaller sizes are known as rabbit beagles, and from time to time very pretty specimens from 9 inches and upwards in height have been produced. The terms "toy" beagles and "sleeve" or "pocket" beagles ought not to be used, the latter originating from a story that a few generations ago it was customary to take beagles to the meet in the pockets of the master and hunters, whilst it has been (also erroneously) stated that Queen Elizabeth had a pack of beagles which could be carried in a glove. The beagle, which has a stud book provided, ought to be built on the lines of a miniature foxhound, and whilst the majority are smooth coated, there is also a rough-coated variety. In the United States and Canada the beagle is more popular than in this country, and competitive working trials are often arranged, in which perhaps a score of little hounds take part. (*See* Hunting.)

Bloodhound—This hound, also known as the Sleuth hound, is the largest of all the variety which hunt by scent, the male varying in weight from 85 lbs. to 110 lbs., the female from 95 lbs. to 100 lbs., their respective heights at the shoulder being from 25 to 27 inches and from 23 to 25 inches respectively. His colour is black-and-tan, brown (or liver-coloured) and tan, sometimes flecked with white or with "badger-coloured" hairs. The nature of the bloodhound is kindly and sympathetic, by no means of that ferocity which his name implies, and which seems by common consent to have been ascribed to him. He makes a nice companion, and is far less ferocious than almost any of the big dogs — Newfoundlands, St. Bernards, Mastiffs, &c. His progenitor may have been the Lymer of Gaston or the Talbot of other earlier writers. Originally intended to hunt the larger game—the stag and such like—he was trained to hunt man, and by a continual process of selection he now naturally does the latter. An ordinary sporting puppy will commence to hunt hares, rabbits, &c., but a blood hound puppy's natural bent is to hunt man a stranger, and not his master, as other young dogs will do. To this faculty he, no doubt, owes his bad reputation, which is gradually being removed, for when he has "hunted his man" to "tree" or elsewhere, he will not worry him to death, as has been said, but either runs up to him to be fondled, or "bays" him—*i.e.*, stands back and barks. The hounds which were said to hunt slaves in the Southern States of America were foxhounds and not bloodhounds, and the former on scent are much the more ferocious of the two. Extraordinary stories are told of

Bloodhound.

the bloodhound's capacity for hunting the line of a man, on whose scent he has been laid, through crowded thoroughfares. He cannot do this, and therefore as an aid to the detection of criminals in busy centres he is useless. In country places he may be used with advantage by the police to assist in the capture of poachers, burglars, and other law-breakers, for, being laid on the scent, even if it is several hours old, he can generally make it out, though should it be too much foiled by others crossing it, or by cattle, sheep, and horses, the hound is at a loss. He used to be employed on the borders against robbers and other offenders, and has been tried unsuccessfully in London and the provinces in cases of murder. In crossing with other hounds he has been found useful, inasmuch as he has improved their olfactory organs and made their voices more melodious. A good bloodhound, when properly trained, ought to be able to hunt what is called the "clean boot"—*i.e.*, hunt a man who has not had his boots smeared with blood or any concocted ingredient. About seven years ago

several "bloodhound trials" were run in London, near Boxmoor, Dublin, &c., the quarry being men or lads; but although so far successful, they did not seem likely to serve any useful purpose, so were discontinued, and have not been revived since. Packs of bloodhounds have been used for stag-hunting, the last of these being Lord Wolverton's, who, about twenty years since, hunted the "carted deer" with them in Dorsetshire. At present the bloodhound is mostly valued as a show dog and as a companion, but he will always be found useful as a cross with other sporting dogs when it is sought to improve the size, nose, and voice of the latter. It is interesting to note that, although in ears, wrinkles, head, and other "fancy" points the bloodhound has been much improved of late years, this has not been done at the expense of other more important attributes. In April, 1897, an association of bloodhound breeders was formed in London, with the object of popularising the variety, especially so far as using it for the detection of criminals is concerned. In certain States of North America bloodhounds are kept in connection with the penitentiaries or gaols, to assist in the capture of escaped prisoners.

Brach (*Brache*, *Rache*)—This name, now obsolete, was by early writers used to describe a hound or any dog which hunted by scent. Sometimes it was applied to a bitch or female hound, but appears to have been given also somewhat indiscriminately to hounds in general. The earliest appearance of the name appears in the Arthurian Legend of Sir Gavaine and the Green Knight (1340). "Braches bayed therefore and breme (loud) noise made." In *Household Expenses* (1467), "a young brasch of halfe yere holde." Caxton *Emydos* (1490), "Theyr braches, retches and bloodehoundes." Carew (1594), "A brache to hunt and bring the game to his hand." Markham—Count. Content.(1611), "When your bratche is near whelping you shall separate her from other hounds," and in his *Gentleman's Recreations* the same writer says, "brach, a mannerly name for a bitch hound." Shakespeare makes several allusions to the brach: "Brach Merryman, the poor cur, is imbost;" "Couple Clouder with the deep-mouthed brach;" "I had rather hear Lady, my brach, howl in Irish;" "When Achilles' brach bids me:" "Hound or spaniel, brach or lym." Caius describes brache or rache as the "shee" sex. In border history the brach was known: "In Gillsland was that Brachell bred, Sikyr of scent, to follow him that fled." Again: "But this sleuth brach," both evidently in allusion to the bloodhound of that day. Jameson, in his Scottish dictionary, defines brachell as a hound employed to discover and pursue game by scent. In Spencer's well-known ballad "Gelert" we have: "And many a brach and many a hound obeyed Llewellyn's horn." Perhaps "poetic license" allowed him to use the word to signify another dog than a hound. Other writers have recognised in the brach the beagle and harrier.

Deerhound—This extremely fine hound, so nearly allied to the greyhound, is often erroneously called the staghound. He is the Scottish deerhound pure and simple, sagacious, intelligent, and in his rough affection and somewhat rugged appearance anything but uncharacteristic of his country. Probably the earliest mention we have of the Scottish deerhound appears in Hector Boece's History of Scotland, a peculiar work, inasmuch as, originally written in Latin, and printed in France 1526-7, it was translated into English by royal command in 1531. Here a story is mentioned that certain Picts went to hunt with the King of Scots at Craithlint. The hounds of the latter so proved their vast superiority to those of the former that the Picts were astonished. To console them the king presented them with both dogs and bitches of the best strains, but, not being contented therewith, the Picts stole one of the king's favourite hounds. The thieves were chased and overtaken; a great fight took place, in which a hundred Picts were slain and threescore gentlemen of the other side, besides a great number of commoners; and of the latter it was said that they had not known what the fight was all about. The hound was recovered. The Scottish nobles have from that time to the present carefully preserved their strains of deerhounds, which were originally used for the purpose of aids in

DEERHOUND.

deer-stalking and in coursing deer. Deer-coursing is not followed now, and retrievers and collies are used in most forests in preference, as disturbing the ground less, and not being so liable to drive the deer out of bounds. At present, it is doubtful whether there are in all a dozen forests where the deerhound is kept for purely sporting purposes, and some recent statistics obtained show that, out of sixty forests, Scottish deerhounds were used only in

about seven. The hound will, however, survive, if only as a purely fancy dog and as a companion, for he is good-tempered, handsome, and sensible, and, when brought up and trained to live in the house or in the stable, no dog is more faithful, and his noble bearing and dark-coloured almond-shaped eyes are always objects of admiration. Of late, Englishmen have paid greater attention to the improvement of the deerhound so far as appearance is concerned, and in all cases when Scottish kennels have been dispersed by auction in London, Englishmen have secured the plums. Prices have ruled small, and at a recent auction a number of well-bred and good-looking deerhounds brought little more than a number of mongrel terriers would have realised, a grand old stud-hound of great character failing to attract a higher bid than a solitary one of a sovereign. This was at the sale of the Duke of Buccleuch's hounds at Aldridge's, London, in 1895. The deerhound should in colour be either brindled in various shades, or blue or fawn, even inclining to red; white is detrimental, though a little is often found on the chest and feet. Occasionally white deerhounds have been produced, or at any rate very pale fawns, but a purely black specimen has not come under notice. The brindles are considered best, and are perhaps most attractive, but many persons prefer a fawn dog, a hue which somehow or other appears to enhance the elegance of the outline of the hounds. The very large and heavily made dogs are not desirable, as, though they may be better able to hold a stag, they are much more liable to cut themselves on the rocks and loose stones than are the lighter hounds. A good male specimen should not stand more than 30 inches at the shoulders, a bitch a couple of inches less; a dog may weigh between 80 lbs. and 90 lbs., a bitch from 70 lbs. to 80 lbs. These figures are taken from well-known specimens of the modern hound which have secured leading honours at our chief shows. Many stories are told of the endurance of the Scottish deerhound; he can run on scent as well as by sight, and is mute in the chase, but when his quarry is brought to "bay" the hound opens, and by his baying or barking attracts his master, who soon gives the *coup de grâce* to a noble stag. At all well-regulated shows with any pretensions to comprehensiveness, classes for deerhounds are provided; but for some reason or other, which can only arise from the vagaries of fashion, he is not a popular dog, and where a St. Bernard approaching perfection might be sold for anything between £200 and £500, a deerhound of equal merit would not realise more than from £50 to £100, and nearer the former figure than the latter.

Foxhound—It has been said that the foxhound has been so carefully bred as to be at the present time the most perfect specimen of the canine race extant. That he is the most valuable no one will deny. He is built in a manner which ensures speed and stamina, and in both respects he cannot be excelled. He is not often seen on our show benches, though when classes are provided for him he is sure to attract attention. There is a foxhound show held at Peterborough each year, which is largely attended; and there representatives of the leading packs are always to be seen. A dog hound weighs from 70 lbs. to 80 lbs., whilst a bitch weighs from 60 lb. to 70 lb. As to the value of a pack of foxhounds, great variation is found. Squire Osbaldiston's pack was sold at Tattersall's in 1840 for 5,219 guineas, whilst the Haydon in 1884 went for 15 guineas; but these are the extremes. A lightly made foxhound is specially bred in the north of England, where it is used for "trail-hunting." In various parts of the world the

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foxhound has been introduced. In the United States it is popular, in Canada likewise. The Virginian hound is less heavily built than our foxhound, has longer and more pendulous ears, and certainly inclines to the bloodhound type. (*See* HUNTING.)

Greyhound—There can be no doubt that the greyhound is the oldest variety of hound which we possess, and the many sculptures which have reached us from the East prove his very ancient lineage. The greyhound was probably introduced into this country when the "Scoto-Celts settled in Scotland and Ireland from Europe." There is a MS. drawing extant of a Saxon with two greyhounds and his henchman, date about the ninth century. Since that period it has altered less than any other family of the dog in type, however it may have improved in pace. The greyhound is one of the most graceful and elegant varieties of the canine race, but he is seldom used as a companion, and seems out of place on the benches at our dog shows, where, however, classes are usually pro-

vided for him. As a rule the best and speediest greyhounds are not the most elegant in shape, and thus it often has happened that the cleverest animal in coursing is beaten in the ring by a very inferior performer. Greyhounds vary much in colour and marking, brindles, fawns, reds, blacks, blues or slate, with more or less white, being the usual colours. Greyhounds entirely white are rare. (*See* COURSING.)

GREYHOUND.

Harrier—This hound may be said to be a connecting link between the foxhound and the beagle, the modern type resembling in appearance the former rather than the latter. The harrier was the *Leverarius* of Caius and of other early writers, and was used to hunt the hare. Of late years, owing to the scarcity of "ground game" in some districts where it formerly abounded, the harrier hunts the "carted deer" and the fox. There is an old-fashioned Welsh harrier which in the principality hunts the fox, the hare, and the otter, bearing a reputation for nose and care in working out a cold scent which is not excelled by any other hound. It is generally marked or coloured in the orthodox foxhound style, but there is also a strain of black and tan harriers. (*See* HUNTING.)

Irish Wolfhound—A great deal has been written about the Irish wolfhound; he has had admirers and traducers. The latter with a good deal of reason urge that the last of his race became extinct when the last Irish wolf was destroyed, the former say he still survives in all his purity. The modern Irish wolfhound is undoubtedly a cross between the Great Dane and the Scottish deerhound; he is by no means uncommon now, and is useful in hunting big game, whilst he can also do his duty satisfactorily in the Scottish deer forests.

Otter Hound—In many particulars this is one of the most interesting of the varieties of the hounds, and appears to be one which we can pretty well call our own. He is a rough, or hard-coated hound, whose hair should be close, piley underneath, and thoroughly weather and water resisting, for the work of the otter hound is of the hardest and most exacting character. Then the constitution must be thoroughly sound and strong. Some modern otter hounds show a distinct cross with the bloodhound, and it is not uncommon to find in the same litter of puppies one that will be blue, gray, and tan in colour, hard and wiry in coat, and fit to win on the bench; whilst another of the litter may be almost smooth-coated, and a half-bred bloodhound in appearance. Some of our leading dog shows provide classes for otter hounds, and their noble appearance, good temper, and animation give them a popularity exceeding that of most other dogs. (*See* OTTER HUNTING.)

Stag Hound—The modern stag hound is merely a foxhound entered and used for the purpose of hunting either the wild or "carted" deer. The name is often applied, but very wrongly, to the Deerhound. (*See* HUNTING.)

Welsh Hounds—There are two varieties of Welsh hounds, one of which partakes of the harrier in size and character, the other resembling the foxhound in size and appearance. Both are, however, rough or hard coated, the hair being hard and crisp, close, and water and weather resisting. The most desirable colour is tawny red, mixed with black and grizzle hairs, and white; others are marked like ordinary foxhounds, and black-and-tans are not uncommon. Some of these Welsh hounds are extremely fine animals, and it is to be regretted that the race has been on the decadence for many years; recently some inquiry has been made for them, as masters of hounds have found them extremely useful in otter hunting. They cast on their own account when at a loss better than the modern foxhound, can hunt an old drag more correctly, and, if slower, are more painstaking, and throw their voices more freely than most of the cracks of our best hunting countries.

OTTER HOUND.

SHOOTING DOGS.

Pointer—Though a comparatively recent introduction into this country, this dog is now one of the most popular of our sporting varieties.

The date of its first appearance here, although not exactly known, was somewhere about 1720, at the time when shooting on the wing was coming into vogue. It is said that one Baron Bechill, who lived in Norfolk, had the earliest pointer, which he brought from Spain. At any rate, for a long time they were known as Spanish pointers, and from what we have been told they were thicker set and clumsier in build than is the modern pointer. They were useful in finding game and had good noses, but were said to tire soon. At the same time there were other pointers in France, some of which were no doubt from time to time brought over to this country. Then Colonel Thornton (Thornville Royal) crossed the Spanish pointer with the foxhound, and is said to have improved the strain exceedingly. From this combination of Spanish, French and foxhound blood has sprung the handsome animal of the present day. Sidney Gilpin, the eminent animal painter, was commissioned to take the portraits of Pluto and Juno, two of the gallant Colonel's best animals, and it is said that they remained on point for an hour and a quarter whilst they were being sketched. Colonel Thornton had another celebrated dog called Dash, which he sold to Sir Richard Symons for champagne and burgundy valued at £150, a hogshead of claret, a gun, and another dog! Then the Earl of Lauderdale, the Duke of Kingston, and other noblemen had celebrated strains of pointers, and Daniel Lambert, so renowned for his obesity, had some black pointers, which bore a great reputation. Later, Mr. Webbe Edge, of Stretley, near Nottingham, gave great attention to breeding pointers, and produced that which was once so widely known as the Edge strain, which, however, is now lost. Some of the blood, nevertheless, remains, and Mr. Edge having nothing but those that were liver and white in colour, such became the most popular, and remain so to this day. Sir R. Garth, Q.C., Mr. J. H. Whitehouse, Mr. Moore, Lord Chesterfield, Lord Derby, Sir R. Goodrich and others formed a connecting link between what may be called two generations, and later came Mr. R. J. Lloyd Price, and Mr. Pilkington, who secured "plums" at Mr. Garth's sale in 1874, where eight brace of pointers realised 490 guineas, £150 for the seven year old dog Drake being the top figure. With the introduction of field trials and dog-shows, pointers and other sporting dogs improved in quality and increased in quantity. Judges were not so particular as to colour, and now, so long as a dog works well, he may be black, black and white, orange and white, lemon and white, or liver and white, and of late we have found dogs of any and all of these colours running successfully in public competitions. On the show bench the liver and white, and different shades of lemon or orange and white do best, although black and whites, and even blacks, sometimes win. In size the pointer varies considerably, and seventy or eighty years ago it is said that the Earl of Lauderdale had a strain which did not exceed 30 lb. in weight. At the present time, at the leading shows they are divided by weight, dogs and bitches 55 lbs. and 50 lbs. weight and over being the large size, and below those standards the small or medium sized. The pointer is easily trained to point or stand game, while in America and Canada he is trained to retrieve. He is as popular on the Continent as in this country. A hot climate suits him better than it does the setter, and he can run longer without water than the latter variety.

POINTER.

Retrievers—With many sportsmen the retriever is considered to be the coming dog, as, in the many cases where grouse and partridge are "driven" or "walked up," a retriever is more useful than pointer, setter or spaniel; besides, he is a good all-round dog for a shooting man. There are two varieties of the retriever proper, the curly-coated, which may originally have been produced from the Irish water spaniel or the poodle: and the flat or wavy-coated, which is no doubt a cross between the Labrador dog, the collie and the setter. Black is the prevailing colour of each, though in the first-named variety liver or browns are not uncommon, and black and tan are sometimes seen. Of the flat-coated variety, liver-coloured specimens are unusual, though puppies of that hue are sometimes produced from black parents. The older variety is the curly-coated retriever; indeed, until a comparatively recent date, say twenty-five years ago, the flat-coated variety was hardly known, and in the first volume of the Kennel Club stud book he is classified with the curly coats; but now it is rapidly forcing its cousin from public favour. Harder in mouth, not so amiable in temper, nor so companionable as the flat-coated variety, the curly-coated retriever chiefly depends upon

its popularity as a wild-fowl dog, and as a winner on the show bench. He is the hardier and pluckier dog of the two, but requires the greater amount of work to keep him in proper subjection.

Although the flat-coated retriever has had many detractors, he could scarcely have flourished and reached such a popularity as he has done, were he not a sound, good, and useful dog for all kinds of work. No doubt there are soft, unpersevering animals of the variety, indeed we have met with such, but they are the exception. As water dogs they are certainly not equal to the curly coats, but in nose, faithfulness, fondness for retrieving, and beauty, they cannot be excelled. In purchasing a retriever, particular attention ought to be paid to the dog's appearance, which should be kindly, sagacious, and sensible, for his work repeatedly requires more intelligence to do it properly than that of other sporting dogs. The light-coloured "gooseberry-eyed" specimen, with sinister, sour expression, ought to be at once discarded, and should on no account, if kept, be used for breeding. The brown, or liver-coloured, curly-

RETRIEVER.

coated retrievers are known in different localities as the Norfolk retriever and as the Irish retriever, but there is no reason to believe that they are particularly connected with either place. The Labrador retriever originally came from Labrador, where it was more or less scarce, and of late it has been impossible to procure specimens with which to strengthen the family of the present flat coats. The Duke of Buccleuch has, it is said, a pretty pure strain of the variety in his kennels in Scotland. The Russian retriever, introduced to this country in the early days of dog shows, was a huge beast of the poodle type, wearing long ringlets qualified to hang up any dog in a thicket of gorse and furze. The Chesapeake Bay dog is a strong cross-bred retriever used a great deal in America for wild-fowl shooting; he is usually brown or somewhat mixed in colour, has a semi-curly coat, is very hardy, and a powerful, strong swimmer. A useful working retriever may weigh anything between 45 lbs. and 65 lbs. according to the sex and the purpose for which it is required.

Setter—There are three varieties of this dog, viz., the English setter, the Gordon, or black and tan setter, sometimes called the Scottish setter, and the Irish setter. The first named is black or blue and white, orange and white, black tan and white, lemon and white, and liver and white in colour: the Gordon, as its name implies, is black and tan, and the Irish is usually red—sometimes red and white. There have been strains of black English setters, but they do not appear to have survived, and the colours alluded to certainly predominate at the present day. Until recently the setter was known as the spaniel, a name which is still applied to it in some country places. In 1814 William Dobson of Eden Hall published a work on training the spaniel and the pointer, and by spaniel he meant setter. The dog was used as far back as the sixteenth century for the purpose of assisting to take game by means of nets, when it was called the "sitter" or "setter" because it crouched down. Even earlier than this, a dog, which was no doubt not unlike our modern setter, had been trained to find partridge and quail, which were flushed and then killed by falcons. The oldest painting of a setter of the modern English form is one by Albrecht Dürer, who died in 1528. It illustrates St. Hubert, and in one corner of the picture is an excellent representation of a black, tan, and white dog of the modern type. In the time of James I. no man was allowed to keep a "setting dog," unless by himself or wife he owned land to the value of £10 per annum, or to £30 per annum if only of life interest. There is extant the copy of an agreement dated 1685, whereby one John Harris, was to be paid thirty-one shillings for training a "spaniell bitch named Quand to sitt partrages, pheasants, and other game." Since these early days many changes have been made in the *English* setter, the improved edition of which was introduced by Mr. E. Laverack early in the fifties. He tried various crosses with different strains, which he mostly obtained in the north of England, the result being handsome dogs which could win on the bench as well as do hard work in the field. In 1872 Mr. Laverack published a book on the setter, which he dedicated to Mr. Purcell-Llewellin, who continued and improved the breed. After Mr. Laverack's death the strain became so mixed that at the present day, although there are many good setters, such a thing as a "pure Laverack" is unknown. The colours were blue and white ticked, which he

called blue Beltons, from a village in Northumberland, and orange and white, or liver and white, all more or less heavily ticked or flecked. Mr. Llewellin still keeps his own strain, guarding against an out cross of any sort; thus the family likeness is preserved, and the habits and methods of working peculiar thereto are maintained. The English setter is one of the handsomest of sporting dogs, good tempered and kindly, is easily trained to shoot over, and often retrieves naturally, a faculty which is not encouraged in this country. Many good dogs have gone to America and to the Colonies at high prices, one being sold for £230, and quite recently £100 was given for another, and £200 for a young dog not twelve months old. Still, the English setter does not realise so much money as some less useful varieties of the dog. The weights vary somewhat, dogs being from 48 to 60 lbs. in weight, and bitches from 40 lbs. upwards. The *Gordon*, or black and tan, setter, was first introduced to the public from Gordon Castle in Banffshire, the Highland seat of the Dukes of Richmond and Gordon. It was possibly originally produced early in the present century from a cross between an ordinary setter and a bloodhound. Many of the original Gordons were black, tan, and white in colour, but by careful crossing the white became entirely eliminated and a Gordon to-day should be black and tan, although a little white on the feet and on the chest is allowed. In this country he is not a popular dog, and more specimens are to be found in America and on

SETTER.

the Continent than here. *The Irish Setter* is much more popular, and during the past twelve years has come more prominently before the public than he had done before. He is a red dog, or red and white, with a certain character of his own, rather lighter and more elegant in build than either of the varieties already alluded to. History does not tell where the Irish setter came from, and he was not known as such much before about 1830, when he was red and white, and it was not probably until twenty years or more later that whole red became the fashionable colour. The loss of the white was certainly not an improvement, as the entirely red dog is very difficult to see on the moors, so much so that he is often used with a white collar or handkerchief around his neck to make him more easily distinguishable against the dark background of rock and heather. As a dog to shoot over, the Irish setter cannot be excelled, and if a little headstrong and difficult to train, when thoroughly broken he is untiring, and can certainly go longer day after day over the mountains and bogs than either the Gordon or the English variety. His scenting powers are quite equal to those of any other dog of the kind, and his pace and style are likewise high class.

RAWDON B. LEE.

Spaniels—There are four varieties of field spaniels, irrespective of the Cocker and the Irish Water Spaniel; these are the Clumber, the Sussex, the Black, and the any-other-colour. All of these have certain points in common, having very long bodies in comparison to their height, short legs and perfectly flat coats, the points in which they differ being the formation of the head, the colour, and, as regards the Clumber, in the size. A dog called a spaniel was known in this country 400 years ago, for it is mentioned (by the legendary Juliana Barnes) in "The Bokys of Hawking and Hunting," 1486. From this animal the setter is supposed to have been produced, but it is scarcely probable that there was very much resemblance between the spaniel spoken of in the fifteenth century, and that of the present day. The use of the spaniel, according to Nicholas Cox in his *Gentleman's Recreation*, published in 1677, was as an assistant in hawking, by springing and retrieving game. The same writer also alludes to shortening the tails of spaniels, a custom which still obtains, but not for a similar reason. At that time the fallacy prevailed that the cutting of the tails of spaniel puppies was a preventive against worms. The tail of the spaniel is now docked in order that he may be enabled to work amongst briars and thick underwood without its becoming lacerated. The spaniel mentioned by Cox is probably that from which all the present varieties of land spaniels have sprung, not excluding the toy spaniels, as, with regard to the latter, it is a matter of history that the Blenheim spaniel, which has now lapsed into a pet dog, was at one time used for covert shooting. It is, however, unfortunately the fact, that the improvement in appearance of the field spaniel to meet the requirements of the show-bench has been accomplished without consideration for his working qualities; fancy points are held in greater favour than some that are considered much more important by sportsmen, and prizes have been given to dogs with forelegs so badly shaped as to render them almost incapable of work.

The *Clumber* spaniel, white in body, with lemon markings on the head and ears, weighs from 45 lbs. to 65 lbs., according to sex. He is massive in build, with long body, short legs, and strong bone, a large head, of medium length, with heavy brows and deep stop, the flews being well developed. The eyes are dark amber, slightly sunk, and showing the haw. The ears are large and vine-leaf shaped and hanging slightly forward, the hair straight, the feather not extending below the fleshy part of the ear; the coat long and dense, heavy feathering behind and on the legs, the stern not carried higher than the line of the back. It is a defect for the colour on head and ears to be orange, the lighter the shade the better. In the field, a well-broken Clumber spaniel is a very useful dog; working about 20 yards in front of the gun at a steady trot, he does not give tongue, and can be trained to drop to hand, wing, or shot, and will retrieve. He is a slow dog, but does not "tire." Clumber spaniels are sometimes worked in teams of a few brace, when they take the place of beaters. This dog takes its name from "Clumber" near Worksop, one of the seats of the Duke of Newcastle, the breed having been introduced from France into this country by an ancestor of the present Duke, who lived about the middle of the last century.

The *Sussex* spaniel is not so large nor massive as the Clumber, the distinguishing feature of the variety being its rich golden liver-colour. Here again is a short-legged dog, with great length of body, well ribbed up, and with muscular hind quarters; his coat is rather hard in texture, dense underneath, and perfectly straight, feathering moderate, that will allow a willing dog to work in the thickest covert of briars and brambles. The head is a modification of the Clumber's, the brows being not so much overhung, the skull moderately long and wide, with an indentation in the middle and a full stop. The eyes dark hazel, fairly large, not showing the haw overmuch; the muzzle square, and lips somewhat pendulous; the nose liver, the ears fairly large and lobe-shaped, coated with straight silky hair, and free from fringe at the tips; tail carried the same as the Clumber and docked. He is hardy, busy, reliable as a worker, and sticks close to his game. He gives tongue when on the line of scent, but is not over noisy; he will retrieve, and is tender-mouthed. The Rosehill strain, which is considered to be the most pure, takes its name from Rosehill Hall, Brightling, near Hastings, where the late Mr. Fuller kept the variety for over fifty years, and used his dogs for beating the large woods and plantations in the vicinity of Brightling and Heathfield.

The *Black* and *any-other-coloured* spaniels are a much more modern production than either the Clumber or the Sussex. When all black he is a particularly handsome animal, in which length of body and shortness of legs with enormous bone are again produced to exaggeration. In head he differs from the Clumber, or the Sussex, inasmuch as it is longer and narrower; the skull is, however, well developed, the occipital bone being prominent, the ears longer and set lower, with more feather. As with the Sussex, the feet should not be too small, and should be protected with short hair between the toes; rather more feathering is, however, admissible below the hocks. The eyes should not show the haw.

FIELD SPANIEL.

The "any-other-colour" include black and tan, liver and tan, liver, black and white, and liver and white, with black-roan, and liver-roan. Admirers of these dogs claim for them that they are reliable workers with the gun, but they are probably seen to more advantage on the show bench, and may be taken as a sound example of what can be done in the matter of breeding "for show points." A variety of this spaniel is known as the Norfolk spaniel, but it is pretty well distributed throughout the British Isles and is by no means confined to the county from which it takes its name. It is liver and white in colour, inclined to be curly in coat, or at any rate wavy, and is higher on the legs and a more active, useful dog for sporting purposes than the ordinary black spaniel.

The *Cocker* is a particularly active little dog, and differs considerably in shape from the black spaniel. He must not weigh more than 25 lbs., and is shorter in body, and comparatively high on the legs in comparison with his size; the muzzle is not so square as in the other spaniels, and the frontal bones rather more prominent, showing plenty of room for brain power; the stop rather more decided; the ears, set on low, are fine in texture and do not extend beyond the nose when laid in that direction. The dog is well clothed with long silky hair, which must be straight or wavy—no postive curls or ringlets; the coat flat or wavy, and soft in texture. In colour he is

the same as the black, or any-other-coloured field-spaniel. He is a merry and busy worker, specially smart in driving game from a gorse covert or other rough place.

The *Irish water-spaniel* is a dog in every respect the antipodes of any other of the varieties of spaniel, excepting only an animal known as the English water-spaniel, of which sight has now been lost, but which, when in existence, might be considered a link between the curly-coated liver-coloured retriever and the Irish water-spaniel. The early history of the Irish water-spaniel is such that no authority has ventured to say much about his origin; all that is known about it is that there were at one time two, if not more, varieties in the north and south of Ireland, and that the type recognised in the south has been taken as the modern one. About the same height as a retriever, in colour he is rich liver with a puce shade. He has the appearance of a strong and dashing dog, with quaint and very intelligent expression, the quaintness being emphasised by the peculiar topknot which falls between and over the eyes, and hides a capacious skull, which is somewhat domed. The face is long, square in muzzle, and perfectly smooth: the nose liver in colour; the coat consists of short crisp curls all over the body, and round and down the legs to the feet, which are large and round. The inside of the hocks to the ground should, however, be smooth in a specimen of absolutely perfect coat, and there should be but little hair on the tail, which is thick at the base, somewhat short, and tapering to a point. Amber eyes are admissible, but

Irish Water Spaniel.

when they are a soft brown, the expression of the face is greatly improved. The ears, which are long and set on low, are abundantly covered with wavy hair, the feather reaching at least 3 inches below the flesh on either side; the whole measures from 24 to 26 inches. He is an excellent water dog, and particularly good for work on wild fowl in marshy ground, but next to useless in covert on account of his coat. Instances have been known where he has been taught to set game, and back like a pointer or setter, but they have been very rare; indeed, his capacity for retrieving is his primary qualification.

Terriers.

The **Airedale Terrier** is the largest of the terrier race, and is a most useful animal to those who can only keep one dog for sport. Originally produced from a cross between the otter hound and a terrier, less than thirty years ago he was to be seen in the northern counties of England (but more generally in Yorkshire), with hound-like ears, and other characteristics of the hound. At that time he went by various names, the "Bingley terrier" and the "Waterside terrier." During the last twenty years, however, since he was given an entry in the Kennel Club's Stud-book, he has settled down as the Airedale terrier and, by careful selection in breeding, all the hound properties have been eliminated, and he is now essentially a terrier. An important feature is his very hard wiry coat, in which respect he has vastly improved during the past few years, as previously, where one with the correct coat was to be seen, half a dozen others with long, silky, and sometimes woolly, coats, or quite smooth ones were to be observed. There should be no ruggedness about the coat, which must lie close and straight: the hair about 1½ inches long all over the body. The colour is also peculiar, inasmuch as the hair on the back is black at the ends and gray close to the body, and this is the explanation of the badger grizzle coat that is desired in this variety. To the unpractised eye the dog appears to be black in body, with tan thighs, head, legs, chest, and ears, and in many cases he really is black, as the dual tint does not appear on the back and neck of every specimen. In this connection it may be mentioned that, when the puppies are born, they resemble the smooth black and tan terrier in coat and colour, and have dark heads; but as they develop, the black leaves the head, and gives place to a deep tan, and the hair on the back gets longer and harder. Many litters of puppies on this account have been destroyed as soon as whelped, on the supposition that they were only dark-coloured mongrels. Forty-five pounds is the weight for a dog, and rather less for a bitch, but many prize-winners do not weigh quite so much. The head is long and very strong about the jaw, with little or no stop, the skull flat, the ears small and set well forward, lying close to the cheeks, the eyes small and dark with a keen expression. His bone is strong for his size, and he is a particularly active dog, with very straight legs and well set up feet.

The Bedlington Terrier — This dog takes his name from Bedlington, a village in Northumberland, in which locality the miners have kept him for many years. It has erroneously been stated that he was brought from Holland by a weaver, the mistake arising through his having had at one time, as his greatest supporter, a Mr. Taprell Holland. A more correct supposition is that he was bred from some other varieties of the terriers, to suit the requirements of the pitmen who wanted a speedy and active dog which could catch a rabbit as well as kill rats and other vermin, and would be useful for dog racing. He is a particularly wiry animal, more slender in build than any other of the terriers that are used for sport, can go a great pace, and is very plucky when occasion requires; in fact his disposition to fight, and jealousy of temperament with other dogs, has had something to do with his not becoming a very popular favourite. Another reason for his not having taken a high place in public estimation is that, before he can be exhibited in the show ring, he is often subjected to a considerable amount of trimming. In appearance he is somewhat delicate looking, but in this respect belies his looks, as, although a dainty feeder, he is hardy enough.

The Dandie Dinmont Terrier has peculiarities in conformation which are not to be seen in any other family of the terrier. These consist of a long body, short legs, and a head which appears to be abnormally large, partly owing to the topknot and moustache with which it is adorned. There is no doubt that the Dandie Dinmont terrier owes much of its prominence in public favour to Sir Walter Scott, who in *Guy Mannering* introduced the character of Dandie Dinmont with his pepper and mustard terriers. It had, however, existed long before 1814, when *Guy Mannering* was written, and was well-known about the borders of England and Scotland, but from whence his peculiar shape was derived no one has been able to discover. Still, there is evidence that in the last century the north country farmers, vermin killers, and others kept a hardy race of short-legged terriers, which assisted in hunting the otter, and were strong enough to kill a fox in its earth. Beside his long body, the dog has a decided arch in his back, which is considered one of the chief characteristics of the variety; his legs, although short, have immense muscular development, the chest being well let down between them; the hind legs are a little longer than the fore and are set rather wide apart. His head, surmounted by a topknot of silky hair, which also appears between the eyes, is strongly made and large, this extra growth of hair being lighter in tint than the body colour.

The Fox Terrier—There are two varieties of this terrier, the smooth and the wire haired. This dog, although but a comparatively modern production in its present state, is the most popular specimen of the canine race in England, and its development is fostered by a most flourishing club. There is also a journal which devotes its entire influence to its interests, and a special Stud Book, besides a publication entitled *The History and Description, with Reminiscences, of the Fox Terrier*. Although the fox terrier, as it is seen to-day, white in body with black and tan, or tan markings, or entirely white, has only been known about 100 years, there is indisputable evidence that a terrier spoken of as an earth dog, and used for going to ground to fox or badger, was known upwards of 300 years ago, and probably much earlier. From this dog the modern fox terrier has sprung, and by judicious selection in breeding the smart little dog, as we see him in the present day, has been produced. It is, however, difficult to fix the time when the fox terrier assumed the colour in which he is now

Fox Terrier.

recognised, for even at the commencement of this century and earlier there were fox terriers black and tan in colour as well as others with a great deal of white about them. It is to be supposed that, as it was the custom for each pack of foxhounds to be accompanied by one or two terriers, the idea suggested itself that a hound-marked terrier would be more desirable for the purpose required, and that recourse was had to a cross with a small hound, probably a beagle, to get the required markings. This seemed evident in the terriers that were to be seen about twenty years ago, from their large ears and full eyes. The occupation of the fox terrier, in his more immediate connection with hounds, is now gone, since foxes are less frequently dug out than formerly, and the new school of masters of hounds has dispensed with his services. With the loss of his vocation, some of that indescribable expression which denotes a readiness for any sort

of rough and tumble work that may come in his way has departed, and he may be now looked upon rather as an ornamental than as a working dog, more suited for the show bench than going to ground to a fox; indeed, as regards the latter, he is often too big for the purpose. His popularity commenced some thirty years ago, since which time he has greatly increased in value. A dog that could previously have been purchased for from ten to twenty guineas soon mounted up to three figures, and as much as £400 has been given for a single specimen.

The Irish Terrier—It is just twenty years since the Irish terrier first obtained recognition in the Kennel Club Stud Book, and then there were only nineteen entries in the section apportioned for it. The total of about one hundred and forty in 1896 will give some idea of the advance in popularity it has made. When the first show of Irish terriers was held in the Exhibition Palace at Dublin in 1874, they were quite a mixed lot, some with long bodies, short legs, and soft fluffy coats, some brindle, and only a few, of red or sandy colour, showing the character that is recognised in the present day. But shortly after this a good terrier was found in Killiney Boy, from whom have been bred many of the best Irish terriers that are now to be seen. It is generally admitted that he is a plucky dog, ready to kill any kind of vermin, but as a rule too large to go to ground. He is fond of water and will fetch and carry. For several years after he was first introduced into England it was the fashion to cut his ears, which made him look particularly sharp, but in 1888 a rule was passed by the Kennel Club, acting on the suggestion of the Irish Terrier Club, that no "cropped Irish terrier born after December 31st, 1889, could compete at shows under their rules." At the present period a cropped Irish terrier is never seen at a show of any importance. In popularity this dog is only second to the fox terrier, and it is very much to the credit of those who have given their attention to the race, that such an uniformity of type has been obtained, considering the short time that he has been in the hands of breeders. The most desirable colours are bright red, wheaten, or sandy, the first-named for preference. No white on the head or body is admissible, with the exception of a small spot on the chest which is to be seen at times in most self-coloured dogs. His coat is hard and wiry in texture, not so long as to hide the outlines of the body, and straight and flat. The head is long, with flat skull, and but little stop. There should be no fringe on his ears. In shape he resembles the fox terrier, but he is built on larger and more racing lines. His tail, which is carried gaily, but not over the back, is generally docked. Twenty-two pounds is a good weight for a dog, and twenty pounds for a bitch, and any deviation from these figures should be in the lighter direction.

The Scottish Terrier—This is believed to be the oldest family of terriers in Scotland, although until recently he had not been so prominently brought forward as the Skye terrier, from the fact of his having been chiefly kept in the Highlands for killing vermin and hunting foxes amongst the rocks in the mountains, where hounds were never seen. Until about the year 1874 he was spoken of as the Skye terrier, but owing to a newspaper controversy in which the advocates of the two varieties each claimed a right to the title, it was arranged that the longer-coated dog should be called the Skye, and the shorter the Scottish terrier. From that period the latter has become very much the more popular, and has been largely introduced into England. It was, however, some time before he settled down as the Scottish terrier, having been called respectively the Aberdeen terrier, the Scots terrier, the Highland terrier, the Cairn terrier, and the "Die Hard," the last-named appellation remaining with him, as so thoroughly representative of his character. He was introduced to us with a serious defect, inasmuch as he had bent forelegs, a malformation claimed by some Scotsmen as a sign of purity of breed. This has to a great extent been rectified, and other improvements have been made in him: he is now not so long in body as formerly, and is of little value if his ears are not tightly pricked, notwithstanding that at one time, semi-erect ears were quite as generally seen; he is a game, hardy-looking terrier, very sturdy in body, on short legs, with great bone and substance, and immense teeth for so small a dog.

The Skye Terrier The Skye Terrier is more suitable for a companion or house dog, and to kill a rat when occasion requires, than for the more serious work of exterminating foxes and other large vermin, for which he was used in days gone by. As a matter of fact, the coat, when quite perfect, is so long that its owner cannot do the duties of a terrier, even if he could see through the hair over his eyes, which is often so thick as almost to prevent his being able to detect anything in front of him. This, however, is not a natural state of things, and is only brought about by the greatest care and attention, in order to gain success on the show bench. This abundance of coat would soon disappear if the animal were called upon to do any work. As mentioned in connection with the Scottish terrier, which was probably the original Skye terrier, these dogs with very long coats are comparatively a modern production, but there is a family of terriers in Scotland which has the characteristics of the one under consideration without the superfluity of hair.

The Welsh Terrier—The Welsh Terrier is quite a recent introduction, for ten or a dozen years ago it had scarcely ever been heard

of outside the Principality. However, when once he made his appearance he quickly found friends, and is now one of the most popular terriers we have. In appearance he has very much altered since a club was formed to look after his interests in 1886, for from a short-headed cobby dog with large eyes, he has been transformed into a smart terrier built much on the lines of the "old English black-and-tan terrier" that has existed in England for many years, but which, since the advent of the Welsh terrier, has almost become extinct. In fact, it is probable that the Welshman owes much of its improvement to the English dog which it has supplanted, for when classes were first made for it at the Birmingham and other shows, several of the winners were old English black-and-tan terriers, pure and simple; and when the Kennel Club gave it an entry in the Stud Book, the classification was for Welsh, or old English wire-haired, black-and-tan terriers. This arrangement did not suit the admirers of either variety, and separate clubs were formed for each, that for the Welsh with success, the other proving a failure. The result was that two years later the members of the Welsh Terrier Club succeeded in persuading the Kennel Club to remove the name of the old English terrier altogether from its connection with the Welsh terrier. There is not wanting proof, however, that a terrier, of the description of those that were first introduced as Welsh terriers, has existed in the Principality for upwards of a century.

FRED GRESHAM.

There are several other Families of Terriers which, if they cannot claim, like the foregoing, to be of any recognised variety, have yet proved themselves excellent for sport. In fact, in almost every district one hears of some terrier or other which has made its name famous in connection with the badger, fox, and otter. These surely deserve some notice, when it is considered that they more generally than not are covered with scars which tell of hardships that they have endured, of sharp encounters in which gameness alone has saved them from premature death. There is the Sealy Ham terrier, so called from the seat near Haverfordwest of the Edwardses, in whose family, it is said, the variety has been kept for nearly a hundred years. These are short-legged and long-bodied, not unlike the wire-haired fox terrier as regards colour, coat, and character of head, but more sturdy, and weighing rather under than over 18 lbs. The late Captain Edwards is said to have been particularly proud of the working capabilities of his dogs, frequently tried with badgers, otters, foxes, and polecats. Perhaps more interesting are the Border terriers, which are met with in Northumberland, and other of the northern counties, and for which is claimed an earlier existence than the Dandie Dinmont and Bedlington terriers, which also hailed from the same locality. They obtain their name of Border terriers from the fact that they were frequently used and bred in the country hunted by the Border foxhounds. The favourite colour for them is red, or black and tan. The services of these terriers, which follow hounds regularly, are often called into use, and they are sent into most dangerous places amongst rocks and peat moss drains, from which they sometimes do not return, so determined are they in the pursuit of their quarry. At Calliper's, near King's Langley,

BORDER TERRIER.

Mr. J. H. B. Cowley has a valuable strain of terriers, short-legged and long-bodied, marked like our fox terriers, but, unlike the latter, kept entirely for work. They excel in going to ground after fox or badger, in which business they are mostly employed.

RAWDON B. LEE.

OTHER VARIETIES.

Whippet—This is a dog originally produced by crossing with a terrier and greyhound, sometimes with the Italian greyhound. It is now a distinct variety, which breeds true to type, and in fact is a "pocket edition" of the ordinary greyhound. He may weigh anything between 10 lbs. and 25 lbs., not larger than the latter weight, and any colour is allowable. The Whippet is much in request by the lower middle classes for running purposes, either to course rabbits, or

to take part in short distance races, the usual course being 200 yards. The competitors are handicapped according to their height or weight. A dog 20 lbs. weight has been known to cover the full distance of 200 yards in 12½ seconds. The sport is very popular in Lancashire, Yorkshire, and in the north of England, but the attempts to bring it into prominence in the southern counties have not been altogether successful. The competitors run on a cinder path, and are started by a pistol. On the mark they are held by a friend of the trainer; the latter runs in front of the dog up the course dangling a pigeon's wing, a towel, or anything attractive to encourage the dog; and the judge at the goal decides each race promptly and expeditiously. In coursing matches rabbits are used, twenty-one or thirty-one trials being run, the kill only scoring. In the large handicaps of this kind each dog runs from three to five rabbits with his opponent, and it will be seen that stamina as well as pace is required in a Whippet to be a champion at rabbit coursing. In some districts the Whippet is known as the Snap Dog.

There are several other varieties of sporting dogs that have been imported into England, which, although used in their native countries with the gun or for hunting purposes, have very little or no vocation here. One of the most prominent of these is the **Basset hound**, which, some twenty years ago, Mr., now Sir, Everett Millais, Bart., was instrumental in introducing into the country. The Basset is hound-marked, very low on the legs for the size and length of his body, and he is somewhat like the bloodhound in head and ears. The chest comes well down between the forelegs, which are heavy in bone, and incline inwards from the elbow joint to the fetlock and then outwards to the end of the toes. He has the appearance of a good-sized hound on very short legs. When used for hunting they go in packs, the followers being on foot. The Basset has a capital nose, and a rich, full cry, but it takes a pack some time to pull down a hare, occasionally from two to three hours, and then it must be in an open and fairly flat country, where there are no large fences nor stone walls. There are two varieties known in this country, the smooth, the more popular, and the rough or wire-haired, known as the Basset-Griffon.

The **Dachshund** is a native of Germany, where he does the work of a terrier, and is particularly good at going to ground to fox or badger. He is said to resemble the old Turnspit, which in days gone by was used by cooks to turn the spit when joints of meat were being roasted. During the last twenty or thirty years he has become very fashionable as a companion, but when occasion requires he will hunt the line of game as well as the Basset-hound. He also has a long body with short legs, and is crooked in his forelegs, but is smaller and differs in colour, inasmuch as he is generally black and tan, chocolate and red, though a few are dappled. He is usually smooth-coated, and his skin is particularly soft and velvety to the touch. Wire-coated and long-haired dachshunds are sometimes seen, occasions of their being produced from smooth-coated parents not being unusual.

The **Great Dane**, under which denomination is included the Boarhound, German Mastiff, and Tiger Mastiff, is an unusually powerful dog that has hunted the wild boar in Germany and other European countries, and is generally to be seen with cropped ears. He is somewhat like the English mastiff, but more slender in build and taller. At one time he appeared likely to become fashionable as a companion, and was taken up as a favourite by ladies and others; but his popularity was not destined to continue, and although a considerable number are kept in the country he has certainly lost ground. He cannot be kept under proper control, objects strongly to the muzzle, and, now that the Kennel Club has forbidden cropping, he is bereft of much of his smart appearance.

The **Borzoi** or **Russian Wolfhound** is another dog which has been introduced to us with a great reputation as a hunter of wolves, but he again, after receiving considerable attention for a few years, appeared to be losing his influence, for, like all other dogs that hunt their game by sight, he is given to chasing little dogs and soon disposing of them. However, a Borzoi Club has been formed, a special show of the variety held, and he seems to be regaining favour. He is one of the most beautiful of the canine race, and is highly appreciated in Russia; his elegant proportions, expressive face, attractive colour, and silky coat all combine to give him a most aristocratic appearance. In his own country a perfect wolfhound must run up to a wolf, collar him by the neck just under the ear, and, with the two animals rolling over, the hound must never lose his hold, or the wolf would turn round and snap him through the leg. Three of these hounds hold the biggest wolf powerless, so that the men can dismount from their horses and muzzle the wolf to take him alive.

The **Persian Greyhound** is another of the race of Greyhounds, and he is usually yellow-fawn in colour and very symmetrical in build. His chief peculiarity is the distribution of the coat, which is longer at the sides of the body and down the legs and thighs than it is on the back; the ears, which lie flat to the head, are heavily fringed. He is about the size of a small greyhound.

Somewhat of the same type is the **Rampur hound**, but quite smooth in coat, and without the arched loin that is such an important feature in the greyhound; he has large ears, in this

particular partaking of the nature of the fox-hound, but very few of his breed have been seen in this country.

The **Griffon** (French), resembling the German wire-haired pointers, which takes the place of a setter in some parts of the Continent, has also found a home in England. He cannot be better described than as like a small otter-hound, possessing the intelligent expression and fine type of head of that hound, but in colour he is usually a liver-roan, and has a shorter and more wiry coat; his tail is shortened to half its natural length. He is steady with the gun, and will point game and retrieve, but he is not a wide ranger.

The **Norwegian Hound**, of which a considerable number have been imported, is a particularly active dog, dark blue-grey, peculiarly shaded, in body colour, with lighter hue of the same on legs and chest. He is not unlike the Esquimaux dog in shape, with prick ears and tightly-curled tail, but is somewhat smaller. His chief duty in Norway, his native country, is to hunt the elk, the bear, and even capercailzie and such "small deer," and it is said he displays extraordinary sagacity in the various departments for which he is specially trained.

FRED GRESHAM.

DISEASES OF DOGS.

In dealing with this subject, it must be understood that allusion is only made here to simple ailments that can be treated without the assistance of a veterinary surgeon. The most formidable malady which confronts the kennel owner is undoubtedly *distemper*, which, as a rule, attacks dogs in their early youth, before they are twelve months old. There is a very general belief that every dog must have distemper at some time of its life, but this is a mistake, for distemper, being a contagious disease, cannot be contracted except by contact with an infected dog or substance—*e.g.*, the clothes of a keeper who has attended a sick dog, a box in which it has travelled, or anything of like nature. The symptoms are loss of appetite in the first instance, followed by a falling away of the muscles of the face, and eventually a discharge of mucus from the eyes and nose, accompanied by a temperature of over 100. In the incipient stage, before the disease has pronounced itself, it is always safe to give a dose of castor oil, consisting of a dessertspoonful to a tablespoonful, according to the size and age of the patient. In the event of this failing to bring back the appetite, recourse should be had at once to a veterinary surgeon.

The various forms of skin diseases are generally amenable to treatment if attended to promptly. There are two descriptions of *mange*, the sarcoptic and follicular. The former is the more easy to cure, and its presence may be detected by the dog continually scratching itself: a bath composed of one part of some disinfecting fluid to forty parts of water, or a mixture of two parts of olive oil with one part of paraffin oil and half a pound of sulphur, well rubbed into the skin, will kill the parasite and eradicate the disease. Follicular mange is not so easily dealt with, as the parasite is buried beneath the skin, but by continually dressing with the paraffin mixture at an interval of from ten to fourteen days a satisfactory result may be obtained. Eczema, which is not a parasitic affection, will generally yield to similar treatment, if accompanied by mild aperients and afterwards by simple tonics. Arsenic is sometimes necessary, but the latter should not be given except under medical instructions. Very little skin disease will be experienced if the bath is freely used, for by that means the skin is kept clean, and fleas and other insects—a source of continual irritation to dogs in warm weather—are destroyed. There is, however, no better mode of dispersing fleas than to rub a small quantity of pyrethrum powder into the coat.

Canker in the ear may be detected by a continual shaking of the head, more particularly after a slight pressure of the hand upon the ear. In an advanced stage, the head will be held on one side, with one ear hanging lower than the other. For this complaint there are fortunately several remedies, for what will cure one dog may be of little benefit to another. One part of liquor plumbi to two parts of soft water; boracic acid dusted into the ear, or the same mixed with oil; a tablespoonful of methylated spirit in a pint of water, will all be found effectual for one or other of the cases that may occur. Another simple and excellent application is a lotion consisting of five grains of alum, one drachm of vinegar and one ounce of water, but, before applying either, the ear must be carefully cleaned with warm water and a soft sponge. Any liquid that is poured into the ear should be luke-warm.

All dogs are very liable to pick up *poison*, which is so often carelessly, and almost criminally, laid about for the destruction of mice, rats, and other vermin. If you suspect that your dog has obtained poison, and a veterinary surgeon or chemist is not at hand, empty the stomach by administering the simple emetic, lukewarm water, and, this done, give milk and white of eggs, or boiled flour and milk, or butter, lard, fat, or olive oil. However, if tartar emetic or sulphate of zinc is handy, give a dose of either in preference to the luke-warm water. Castor oil administered later on is useful, and if exhaustion is apparent, brandy, wine, or strong beef tea ought to be given to the patient. Arsenic, phosphorus, and strychnine are the most common "rat-poisons," the effect of strychnine being marked by frequent contraction of the limbs and cramps. Arsenical poisoning may, as a rule, be detected by swelling and violent pains in the bowels, accompanied

by purging, feverishness, and unnatural thirst. The symptoms of poison by phosphorus take the form of peculiar listlessness and giddiness, vomiting, and an aroma from the mouth not unlike the smell of garlic or of lucifer matches. Although cases of poisoning of this kind must be alluded to here, it is always best to obtain skilled professional advice as soon as possible. [*See* VETERINARY WORK.]

There are a few simple rules with regard to the management of dogs which should always be borne in mind by the kennel-man or by the master. Grass is an important factor towards promoting the health of dogs; the first remedy which nature dictates to him for any sickness is a blade from the greensward. Attention to sanitary arrangement and the ventilation of kennels are likewise of primary importance, whilst regularity in feeding, a continuous supply of pure water, clean, dry bedding and benches, and sufficient exercise will not only add to the dog's comfort but maintain him in the best possible condition.

BREAKING AND TRAINING.

Different views are held by breakers as to the best mode to adopt in training young pointers and setters for shooting purposes. A prominent owner of field trial winners, when commencing to handle his puppies, allows them to chase birds as much as they like to begin with; his opinion being that the more they do so, the greater is their anxiety to hunt for and find them. In fact, he says that the most successful dogs that he has owned have all been broken in this way, and that those puppies which are too much schooled at first do not develop sufficient dash, will not range wide enough, and in the end become potterers. When his puppies begin to show signs of pointing, he makes much of them, and they soon give up their bad habit of chasing and are easily make steady at point. He does not use the check cord, nor, except on very rare occasions, does he have recourse to the puzzle peg. Two things that add greatly to the facility of breaking young sporting dogs are, first, that they be bred from parents that have good reputations as workers, and secondly, that they have confidence in their owners. To obtain confidence they should be constantly in their presence, for the puppy that accompanies his master on all possible occasions will soon find out what he is wanted to do; thus all the earlier lessons, such as teaching him to drop to hand, to keep to heel, and being held on, are easily acquired. A perfectly raw puppy can easily be taught to down charge in a few hours without the use of pegs, spike collars, or any other of the contrivances that are used by some breakers. Take your pupil into a large field, some distance from home, put him down on his belly, and hold up your hand, at the same time continually repeating the words "Down charge." Walk a few paces backwards from him, and when he gets up to follow you, as he will do at first, take him back and put him down again. By such means he will soon drop to hand when desired, and it will take only a few lessons to teach him to keep to heel, if a little kindness is shown and encouragement given. Having once taught the puppy to drop to hand, and keep to heel, two most important rungs of the ladder have been climbed, and the first lessons in obedience have been instilled. Some breakers choose the spring of the year, when birds are paired, to make their young pointers and setters perfect at point, but there are objections to this, inasmuch as there is no possibility of killing a bird to them, and rewarding them for any special good work that they may have done. Some drilling must of course be done in the spring, but it is better to give the finishing touch at the latter end of August or the beginning of September. The loss of a few days' shooting may be the result, but this will be amply recompensed in the greater proficiency that the dog will acquire. When, however, field trials are in contemplation, the work must all be done in the early spring. In the present day, when so little covert is to be met with, it is absolutely necessary that pointers and setters should be free rangers. During tuition they should be encouraged to take wide beats, but the whistle must always be used when they get to the fence, and so they are taught not to break field. For the first two or three times when birds are flushed, the inexperienced puppy will most probably chase them as far as he can see them. This should not be interfered with, except by the whistle when the fence is reached. On the puppy's return, however, he should be dropped to hand at the place where he started to chase, this to be done with a view to teaching him to drop to wing. When holding him on at the commencement of a beat, care must be taken to give him the wind, for it is very unlikely that even the most perfectly broken animal will find birds when the wind is against him, how much less then is it probable that a novice can do so. If this principle be steadily adopted, the dog will in due time seek the wind himself.

The endeavour must always be to encourage the young dog by rewards and flattery to use his brains as well as his nose, for without this combination no pointer or setter can be a perfect birdfinder. A golden rule in connection with tutoring puppies is not to do too much with them at one time, and always, if possible, to take them home after they have done a meritorious action, at the same time letting them know that you are pleased with them. Now supposing that the puppy has learnt all the minor details of breaking, will quarter his ground properly, does not break fence, will drop to hand, wing, and shot, is steady at point, and is

obedient to whistle and word of command, his education is still a long way from being complete. He must yet be taught to back, and he may be gun-shy, though that fault is more frequent with dogs that are kept shut up in kennels than with those that more or less have their liberty and become accustomed to all sorts of unusual sounds. If there is the slightest inclination to be gun-shy, the endeavour must be to make the offender aware that the sound of the gun will not hurt him, but rather that it is associated with something from which pleasure is to be derived. All sorts of plans have been adopted to accustom young dogs to the sound of the gun, some men even firing off a pistol a short distance from the kennel just before feeding, while another method is to couple the puppy to an old dog which is perfectly steady to shot. Some offenders in this direction will gain confidence after a few birds have been killed to them, and not again show any nervousness, but in the case of a puppy a gun should not be fired over him unless a kill is certain, when he will probably be so pleased with the result as to become reconciled to the sound. If a dog is decidedly gun-shy, it is only waste of time to try to cure him. When teaching a puppy to back, it is desirable that he be taken out with a well-seasoned and perfectly steady dog. On seeing the latter make a point, the youngster may back of his own accord, or he may run in, and either flush the birds or take the point, or possibly may not take any notice whatever. Should he not behave properly, the handler must wait until he can get the puppy behind the pointing dog and then put him down, but if, after this has been repeated a few times, there is no improvement, the check cord and peg must be brought into use. Before being pegged down the puppy must have been accustomed to being tied up, or he will struggle to get free, and all the time that has been bestowed upon his training will probably be thrown away.

A bad habit which some dogs contract when being worked as one of a brace, is following close on the heels of their companion, which very often perplexes the leading dog. This under any circumstances is most objectionable, and is unpardonable in an adult pointer or setter, but puppies can sometimes be cured of it. False pointing is another fault; this is the result of overtraining, but it is often a sign that, although the dog knows his work, he has not a good nose and has no confidence in himself, or, like blinking, it may be brought about by fear of punishment. One of the most important attributes in a pointer or setter is that he should carry his head high when in quest of game, and if he goes with his head low, the puzzle peg may be used, but this requires great care in adjusting. Some breakers commence by using the check cord, but there is no doubt that to a certain extent it cramps the action of the wearer; nevertheless, if a puppy persists in declining to point, or back, or in chasing fur, it must be used. In districts where there are plenty of hares there is not much difficulty in making a dog steady to fur, but when they are not often met with, some live rabbits may be turned down, and the pupil put through his lessons with the check cord and peg.

These instruments are next to a necessity in training a retriever, in fact, it is only the most thoroughly broken dogs of this breed that can ever be taken out without a check cord or lead. A retriever puppy, like young pointers and setters, may be taken in hand as soon as he has outgrown his puppy habits, which may be any time between five and ten months old. As a rule there is not much difficulty in teaching him to fetch and carry, his early tuition commencing with a glove or a soft india-rubber ball. It will greatly facilitate matters in this respect if a reward is ready for him in the shape of a piece of meat or other dainty when he is having his lessons. Then, as to dropping to hand, the same tactics must be employed as those already described for pointers or setters. You next want him to hunt on his own account, and this may be done by hiding the ball and encouraging him to seek for it; he will have partly learnt this lesson when seeking for the ball that he had seen thrown and that had rolled out of sight. Here again he must be rewarded on completing his task, and also when he is obedient to whistle. With the check cord you can make him keep to heel, and then there is only one more accomplishment for him to acquire before he is ready to be entered on game, and that is to take to water freely. Most dogs, if they have not been forced when puppies to go in against their will, are fond of the water, more particularly retrievers, which inherit the liking for it from the Newfoundland or Irish water spaniel. If, however, there is any difficulty in persuading the dog to enter the water, choose a warm day, and place a ball, a piece of biscuit, or anything that he likes, close to the edge of the stream, then a little way in, and so on until he has to swim for it. He must be well rewarded when he has brought it, if the ball has been used.

That a retriever should not mangle his game is most important, and he should carry it in his mouth alive without injuring a feather or disturbing a hair. At the same time it is dangerous to let a puppy begin by retrieving a wounded bird, and it is better to drop the dog and knock the bird on the head first than to run the risk of the former giving it a nip, and so laying the foundation of a bad habit. Should a runner be lost in a fence, after the puppy has had plenty of time to try to find it, a dead bird should be placed somewhere near the spot, and the reward given in the same way as if the lost bird had been found. It is not unusual for an untutored retriever to attempt to make a meal of his find:

under these circumstances there is used an instrument called a retriever bit, which is in the shape of the letter U and lies on the dog's "grinders," preventing his mouth from shutting. This, like the spike collar, is an expedient only worth trying when the puppy to be experimented upon promises in every other respect to make a perfect retriever. Game should be retrieved quickly, and when there is any hesitation in this respect the dog becomes subject to suspicion. He would most likely eat the bird if he thought he could do so without being found out. A puppy should not be allowed to retrieve fur until it has been well broken on feather. Spaniels may be taught to drop to hand and shot in the same way as pointers and setters, but, as it is a *sine qua non* that they should not hunt out of gunshot, the check cord is necessary in breaking them, if they are to be quickly got ready to enter upon game. Clumbers, more particularly, are worked in teams; when they are first handled, the man in command should have another person with him to act as whipper-in to teach them to answer quickly to the whistle. With this assistant present, the principal need not carry a whip, and, as his companion does all the rating, the spaniels are more willing to hunt close to him. The peg will be required to break them from chasing, but with unruly spaniels it is sometimes the custom to put a belt or collar with a few pounds of shot in it round their necks, or to put a bandage on one of their hind legs. Then, in order that the guns may be able to discern in what direction the dogs are working when they are beating thick coverts, bells are sometimes attached to their collars. A well-broken spaniel that will keep within twenty yards of the guns, and retrieves, is a very useful dog to shoot over, either when hunted in a team or singly, whether the variety be a Clumber, a Sussex, a Field, or a Norfolk. The Irish water spaniel requires much the same tuition as the retriever. [*See also* SHOOTING.]

RAWDON B. LEE.
FRED GRESHAM.

GLOSSARY.

Blaze—A white mark up the face.

Brisket—The front of the chest.

Button Ear—An ear which falls over in front, concealing the interior, as in fox-terriers.

Cat Foot—A short, round foot, with high and well-developed knuckles.

Chest—The whole body of the dog from the brisket to the belly.

Couplings—The length between the tops of the shoulder blades and the tops of the hip-joints.

Cow-hocked—Having the hock-joints (*q.v.*) turning inward as a cow's, and almost touching.

Crest—The upper ridge of a dog's neck. Usually applied to sporting dogs such as the setter.

Cropping—Trimming off part of a dog's ear with the object of bringing it nearer to a conventional standard of beauty and making it stand erect and pointed. Cropping is not allowed in this country, it being discontinued in 1895.

Dew Claw—A rudimentary toe or claw found occasionally upon the inside of the lower portion of the fore and hind legs of all breeds, but especially upon St. Bernards.

Dew Lap—Pendulous skin under the throat.

Dish Faced—Having the nose higher at the tip than at the *stop* (*q.v.*).

Docking—The practice of cutting or shortening a dog's tail.

Drop-ear—The same as "*button-ear*."

Elbow—The joint at the junction of the arm and fore arm, close to the body.

Enter—To train a dog to his future work.

Feather—The fringe of hair on the stern, ears and back of the legs. Sometimes used of long hair generally.

Flag—The name of the tail in some breeds, especially Setters and Retrievers.

Flews—The overhanging lips of the upper jaw.

Frill—The feather or hair under the neck or throat of a long coated dog—especially in a setter.

Hare-foot—A long, narrow foot, carried far forward. Contrasted with Cat-foot.

Haw—The inside eye-lid, which is plainly seen, reddened by exposure to the light; most apparent in the Bloodhound.

Height of a Dog—The perpendicular distance from the top of the shoulder-blade to the ground.

Hocks—The joints between the *pasterns* (*q.v.*) of the hind legs and the upper part of the leg.

Hucklebones—The tops of the hip-joints.

Knee—The joints between the pasterns of the fore legs and the upper part of the leg.

Leather—The skin of the ear, most generally used when speaking or writing of the bloodhound.

Level Jawed—Epithet given to a dog whose teeth meet evenly, and whose jaws are never *Overshot* (*q.v.*) nor *Undershot* (*q.v.*).

Overshot—Having the upper teeth in advance of the lower. An excess of this characteristic is said to make a dog **Pig-jawed**.

Pad—The thickened protuberance on the sole of a dog's foot.

Pastern—The lowest section of the leg, from the foot up to the knee or hock, according as it may be of the front or hind-leg.

Pily—Epithet of a coat consisting of two kinds of hair, the one soft and woolly, the other long and wiry.

Rose-Ear—An ear which folds at the back, and whose tip falls away backwards, exposing the interior.

Rounding—Trimming a hound's ears in order to protect them from being torn by gorse, &c.

Shoulder—The top of the shoulder blade, the point from which the height of a dog is measured.

Stern—The tail of a sporting dog, especially of a Foxhound.

Stifle—The joint in a dog's hind leg next to the buttock; the hip joint.

Sting—Epithet applied to a tail which tapers to a fine point.

Stop—The indentation just in front of the eyes, between the skull proper and the nasal bone. It is most prominent in Bull-dogs, Pugs, and short-faced Spaniels.

Top-knot—The long hair on the top of the head of an Irish water spaniel or on any other dog.

True Arm—The upper part of the foreleg, contrasted with the lower, which is also known as the fore arm.

True Thigh—The upper part of the hind leg.

Tulip-ear—An ear which stands erect; this ear is not desirable in any variety of sporting dog.

Undershot—A dog is undershot when the lower teeth project in front of the upper ones. This deformity in a terrier is absolute disqualification in the prize ring.

Wire-haired—Epithet of a coat in which the hair is coarse and harsh. Commonly used to distinguish the long-haired varieties of dogs that are usually smooth-coated, even when the hair is not rough.

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DORY (*Zeus faber*).

MEASUREMENTS, ETC.—Length of head $2\frac{3}{4}$ to 3, of caudal fin, $4\frac{1}{2}$, height of body $2\frac{1}{4}$ in total length. The greatest thickness of the body equal $\frac{1}{3}$ of its height. *Eyes*—high up, one diameter in the post-orbital length of the head. Head as high as long. Mouth very protractile, its cleft oblique, the maxilla being nearly perpendicular when it is closed, and not reaching backward to beneath the eye: lower jaw the longer, and terminating posteriorly in two spines. Opercles spineless. Scapular region ridged in the adult, and having some spines in the young: some also at occiput. *Teeth*—finely cardiform, present on the jaws and vomer, but not on the tongue or palatine bones. *Gill-rakers*—few, short, and finely spinate. *Fins*—first dorsal almost continuous with the soft portion; its spines rather strong, gradually increasing in length to the fourth; the interspinous membrane is externally prolonged into filaments of varying lengths, while at the base of each spine is an outwardly-projecting spinous process. Second dorsal increasing in length to its third quarter, and armed along its base with from 7 to 10 spines on a bony plate, each of which consists of two portions: the largest, curved and broad, is directed somewhat backward, while the shorter portion is produced outward and a little forward: its rays unbranched. Pectoral short. Ventral as long as the head, and having, in the young, a spinate base: a double ridge extends from the fin to the vent, armed with eight lateral spines on either side. The anal spines and rays are similarly armed to those of the dorsal fin. Second anal spine the longest, and somewhat the strongest. Caudal rounded. *Scales*—not imbricate, a few along the cheeks. *Lateral-line*—descends in a gentle curve from opposite the upper edge of the eye to above middle of the anal fin, from whence it proceeds direct to the centre of the base of the tail. *Viscera*—stomach rather large, the narrow pyloric portion encircled by numerous cœcal appendages, which in some cases are branched. *Air-bladder*—elongated, with the appearance of a slight constriction in its posterior fourth, while a rounded muscular body exists in its anterior fourth, from which passes a tendon. On opening the air-bladder, its lining membrane is found to cease at the commencement of the last fourth of the organ, and here it forms a very low valve. In the interior of the upper half of the air-bladder is a narrow, vermiform, red gland, of a semi-circular form. *Colours*—olive grey, with a yellowish tinge, and usually yellow wavy horizontal bands. In the middle of either side, just posterior to the pectoral fin, a circular or oval black spot, surrounded by a narrow yellow ring. Fins grey; in some examples the ventrals are nearly black; in others, two rather dark horizontal bands pass along the dorsal and anal fin.

Day, *Fishes of Great Britain and Ireland*, vol i., p. 139.

DRIVING

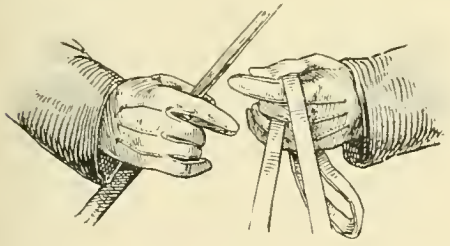
From the earliest times the "harness horse" has been of vast use to mankind both in war and in peace. He drew the chariots of the ancients, and he is the pleasure horse of to-day, but notwithstanding the time which has elapsed since the horse was first a draught animal, it was not until the first decade of the present century that driving upon any recognised system came to be practised. So soon as wheeled vehicles came to be driven at any pace, it was discovered that various details became of importance, and that things which had never before been regarded as material were not without weight. This was in the days when coaching began to be a science; vehicles were built of less weight; lighter horses were used; the stage coachman improved in social status, and consequently in appearance, and the result was that definite rules for driving were observed. In fact, the whole code for driving arose out of the custom of four-horse driving, and it is a curious circumstance that no early treatise on driving is to be found.

Whether the reader adopts the style here recommended, or any other, he must be prepared to encounter many different opinions. Many persons are given to say that so long as one or more horses can be driven in safety, the observance of sundry minor rules is of no consequence. It is not well, however, to fall in with this theory. Now that sport and pastimes are receiving so much attention, the value of a "coach" is universally admitted. The self-taught rowing man, cricketer, equestrian, boxer, or what not, seldom or never achieves a success. If there be two ways of doing a thing, the self-taught man generally adopts the wrong method. In driving, as in other pursuits, not a little depends upon the observance of rules which have been laid down, not merely for the sake of insisting on some arbitrary system, but because they have been found to be productive of certain advantages. Take, for example, the way in which a man sits and holds his reins. Nothing is more common than to see a driver sitting on the very edge of a seat, his legs tucked under him, and the reins held in the tips of his fingers, a combination which renders his position unsafe, and prevents his having any real control over his horse or horses; so that, to start with, the seat on the box, and the holding of the reins are important matters.

For the purpose of the present article it must be assumed that the reader has some elementary

knowledge of driving; he must, too, refer to the glossary for the names of the parts of the harness and carriage. During a novice's early attempts at driving, the reins will have been handed to him in the course of a drive, while he is seated beside his instructor; but after some time he will start himself, and in this connection he must be warned not to mount a vehicle without first taking the reins in his hand, unless he has dismounted and handed the reins to some one else to hold during his absence from the driving-seat. To mount without reins is to court accident, as, should the horse start before the driver has the reins in his hand, an immediate smash may take place. Again, if it be necessary to put passengers in the vehicle before the driver is up, an attendant should stand at the horse's head the while, nor should he move under any consideration until the driver is in his seat and gives the signal to start.

DRIVING A SINGLE HORSE—**Holding the Reins**—The first and second fingers of the left hand are placed between the reins, the left, or near side rein being uppermost, that is to say, over the forefinger; the right, or off side rein is then between the second and third fingers. Many persons are seen driving with the forearm and wrist quite straight, and the thumb pointing to the front, while the reins are held near the tips of the fingers. This is wrong. The arm should not be held straight at the side of the body, because then the right hand cannot readily be brought to the assistance of the left



REINS FOR SINGLE HORSE.

without swaying the body about. The forearm should be carried across the body, so that the hand is opposite the waistcoat buttons. The wrist, instead of being perfectly straight in continuation of the forearm, should be very slightly bent, and the reins, instead of being at the tips of the fingers, in which position the driver has no power over his horse, should lie at the roots of the fingers, and, with the wrist bent as directed above, the top rein will lie just over the lower knuckle of the forefinger. The back part of the reins will then be in the palm of the hand, and from the beginning the novice should accustom himself to press the third and fourth fingers on the reins, by which means they will be prevented from slipping. When driving a single horse, this pressure of the third and fourth fingers on the palm of the hand is not absolutely indispensable, but it will be good practice against the time when an attempt is made to drive tandem or four horses, as in both these cases the fingers must be pressed down to prevent slipping. With the reins held as directed, there will be a sense of strength and firmness which will be entirely lacking when the reins are at the finger tips.

The left hand must not, of course, touch the body, or there will be no power to stop the horses, nor must the hand be held right away in front, as delicacy of handling would then be impossible, and the arm would quickly tire. The position must be easy, but the exact number of inches which should separate the hand from the body cannot be laid down: from six to eight inches will probably be found somewhere near the mark for the generality of people with ordinary horses.

Management of the Reins—It stands to reason that no horse can be driven with one hand alone, except on a country road where no other vehicles are either met or overtaken, and then only when the horse goes so temperately as not to require the assistance of the right hand. The latter will from time to time be needed. The second, third, and fourth fingers, may be placed between the reins, and the hand may grasp them in front of the left; two fingers (the first and second) may be placed on the right rein to aid in holding the horse, or either rein may be grasped with the right hand when about to turn a corner. The proper way to grasp a rein with the right hand is to put the little finger up against it, and take it with the full hand. For example, suppose it becomes necessary to take up the right rein, the right hand should be placed a few inches to the front, more or less, according to the amount of force judged to be required, and slipped in between the reins. The elbow is at the same time allowed to leave the right side, and when the rein is grasped by the right hand the line of the knuckles will be nearly parallel to the reins. If the left rein be taken up, the action will be the same.

One thing there is which beginners and self-taught drivers are frequently guilty of doing, but which never should be done. When they bring the right hand to the assistance of the left, especially on the right rein, they are very much given to pulling the rein out of the left hand. The reins thus become of unequal length, and if the right hand were removed the horse would immediately be guided to that side on which the rein was tightest. It is extremely difficult to avoid doing this, but the beginner should ever be on the watch, and should remember that in all circumstances the reins must ever be of equal length in the left hand. If by any chance one of them should be drawn out, it must immediately be slipped back again. The

firmer the third and fourth fingers are pressed upon the rein in the palm of the left hand, the less easy will it be to draw out either rein with the right hand. Another thing to be remembered is that, so far as is possible, the left hand should be kept still and in the same position, but more will be said on this point when we come to the driving of four horses. In speaking of keeping the left hand still, beginners may be warned against indulging in that most uncoachmanlike and reprehensible practice of jerking the reins, "jobbing" the mouth as it is called, to make the horse quicken his pace. Anybody having any choice in the matter will never buy a slug, or, if he do chance to become possessed of one, will get quit of him at the earliest opportunity, for there is no pleasure in driving a horse of that kind. Still, his mouth must never be jerked, for the habit once acquired is very difficult to forget, and to "job" the mouth of a free-going, high couraged horse is to spoil him. If one finds one's self behind a sluggish animal he must be driven up to the bit by means of the whip.

The embryo coachman will, as he acquires proficiency in driving, hear a good deal about hands; and, although this estimable quality cannot be treated of in few words, the beginner will do well to remember that some advance will have been made if he never use more force on the reins than is absolutely necessary. It is far easier to observe this rule when driving than when riding. When on horseback the rider's balance may be disturbed by any sudden motion of the horse, and, if he find himself in company, the horse may begin to pull a little, which may induce the rider to pull at him. When driving, however, there is considerable security on the box seat, and there is seldom or never occasion to clutch at the reins as unfinished performers in the saddle are apt to do. The coachman should never leave slack rein out. The reins should be gathered up so that with each stride of the horse a slight tug at the reins may be felt, that is to say when a temperate horse is driven; and none other will be driven by a tyro. But even if he be somewhat impetuous, care should be taken that no greater pressure should be put upon the horse's mouth than will suffice to hold him. The driver must give and take with his horse, "dropping his hand" as the phrase goes, when the horse gives him the opportunity, and restraining him when inclined to go too much ahead.

Closely allied to the management of the reins is the use of the legs in driving. They should not be tucked up under the body, with the driver standing on his toes, so to speak; nor, on the other hand, should they be thrust out so as to bring the toes against the dashboard. On the position of the feet when there is no dashboard, the reader is referred to the remarks on driving four horses. The driver should sit well on his seat, and not on the front edge of it, and the legs should be just so far out that the whole of the foot from the heel to the toe is on the footboard; the latter, in fact, should be to the coachman what the stretcher in a boat is to the oarsman. No one can row properly with the arms alone, neither can he drive; the feet and legs must lend their assistance.

The Whip—(See remarks on driving four horses).

DOUBLE HARNESS—The directions given above for driving a single horse apply in the main to the management of a pair. The manner of holding the reins is the same, and the remarks concerning the right hand apply equally in each case; but of course two horses are more difficult to drive than one, because the coachman has to see that both horses share the work equally. In the case of a single horse, he alone has to draw the vehicle, and every indication given to him by his driver determines whether the passage round corners, or between two vehicles, can be made with safety or not. Two horses, on the other hand, cannot be said to be driven unless each does his share towards accomplishing the work. This is partly a question of harnessing, and partly a question of coachmanship. It is an old, but very true, saying that a pair of horses well put together are half driven, and the proper harnessing of two horses is really a more difficult task than driving them.

In double harness there are three things to be taken into consideration when putting a pair together—the adjustment of the traces, the adjustment of the coupling reins, and the manner in which the horses are poled up.

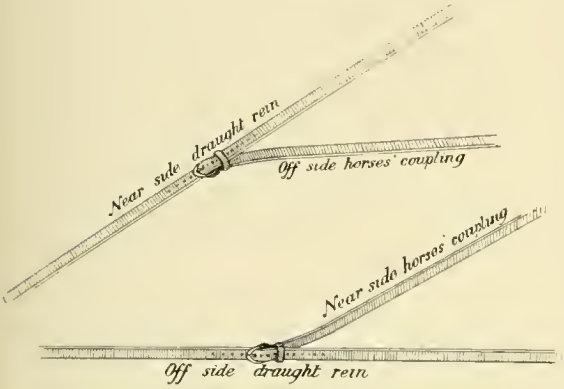
The Traces—To take the traces first. These must be so arranged that the horses work evenly. Every one who drives a pair for pleasure will of course take care that the horses match tolerably well in point of length and size, so that they should work well and evenly together. The traces should be relatively of the same length; that is to say, the collars of both horses should be even with each other; both horses should be as near their work as possible, but not so near as to cause the action of the hind legs to be interfered with by

Splinter Bar.

the splinter bar. How to put the horses to a vehicle will be best learned by watching some competent person, and asking him to explain the distance which should separate the haunches and backs of the horses from the splinter bar. The traces, once correctly adjusted, should never

be touched, and if the horses do not work together, it is the coupling reins which must be altered and not the traces.

The Reins—If the reins of pair-horse harness be examined, it will be seen that they are composed of four pieces. There is one long rein, called the draught rein, which has a buckle halfway in its length, the buckle being (when the rein is in use) at that point which is in the



carriage behind the coachman's hands. The ends of this draught rein are buckled to the outside of the bit of each horse, that is to say, one end is buckled to the outside (left side) of the left or near side horse, and the other end to the out side (right side) of the right, or off horse. As it is perfectly clear that two horses could not be driven in this fashion, coupling reins, or couplers, have been designed to give the coachman the necessary control over his horses. Holes are punched in the draught rein at some little distance from the hand part, and from each side of the draught rein runs the coupler, the rein which is fastened to the inside of the bit of each horse. The illustration will make this clear.

It will be seen that, when the right or off draught rein is pulled, both horses will receive the indication to turn to the right ; the off horse will feel the indication through the medium of the draught rein, and the near side horse through the pull on his coupling ; while, if the left rein be pulled, the draught rein acts on the near side of the near horse, and the off horse receives his hint how to turn from the action of the coupling rein, which runs from the near side draught rein to the near side of the off horse. Here, it may be noted, that if the direction be given to take up or let out the near or off horse's coupling, the coupling which runs from the opposite draught rein is indicated. The near horse's coupling runs from the off side draught rein, and the off coupling from the near side draught rein.

At first sight, the adjustment of these coupling reins would seem to be a very simple matter, but really it requires a good deal of judgment to put a pair of horses properly together. It is seldom, unless great trouble and expense have been incurred, that two horses are found with precisely the same freedom, and consequently the coupling reins must be so adjusted that while the freer horse is restrained, the slower has more freedom. The effect of letting out a coupler is to tighten the draught rein, to take up a coupler is to slacken the draught rein ; and when one horse is slower than the other, that which is less free should generally be put on the off side, where he can with greater convenience be gently touched with the whip.

Coupling Up—In double harness the horses are attached to the carriage by the traces and the pole-chains or pole-pieces, the latter being wide leather straps. Stage coaches, private drags, mail phaetons, and T-carts, in fact, all carriages which are presumably driven by the owner, have pole-chains, while broughams, victorias, landaus, and all carriages which the coachman drives have pole-pieces. Both pole-chains and pole-pieces are fastened to the pole-head, and, when the horses are put to, either chain or piece passes through the kidney link of the harness. The chain is made secure by putting the hook at the end through one of the links of the chain ; the pole-piece by the ordinary buckle arrangement. Within the last year or two, the Kipling pole has been invented. It differs from the ordinary pole-head in that the pole is altogether shorter, reaching no more than an inch or two in front of the horses' chests, and from the end two metal curved arms turn right and left, so that the attachment is very much shorter than either pole-chain or pole piece. Several advantages are claimed for it, one of them being that there is no projecting pole to run into other vehicles ; while it has been urged in its favour that with it the horse can hold back the carriage, and can turn more easily than when the ordinary pole is employed. New inventions, however, in the matter of harness and carriage fittings make their way but slowly into popular favour, so it remains to be seen whether this will ever come into anything like general use.

Any one buying a carriage for two horses, especially a second-hand affair, should be most careful to have the pole examined by an expert to see if any fault can be observed. A broken pole almost invariably means a frightful accident, although the brakes now almost universally attached to carriages may render valuable assistance : still, with the pole broken, there are absolutely no means of checking its progress, unless the horses be going uphill, in which case the pole would seldom break. From time to time, the pole should be examined by some competent person, and no consideration should induce any one to drive with a pole that is defective, or with any makeshift contrivance.

TANDEM DRIVING—The theory that the driving of two horses tandem fashion arose from

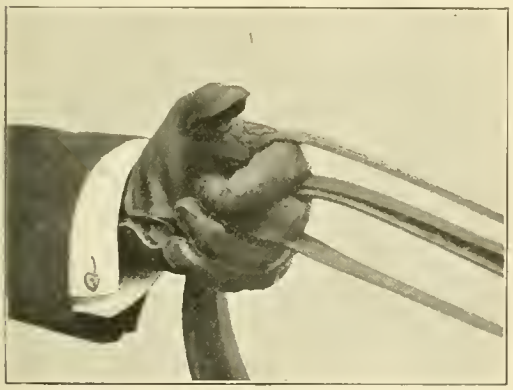
hunting men desiring to take on their own hunter in economical fashion and putting him leader, may be at once dismissed as groundless. A far more reasonable theory is that as four horses were used to draw a four-wheeled vehicle, the idea occurred to somebody that both the team and the vehicle might be divided, and that two horses might be of as much service to the dog-cart as four were to the coach or travelling chariot. In the main particulars, the rules for four-in-hand driving hold good for tandem, but in the harness there is some difference. The wheeler in the tandem wears the same harness as the ordinary dogcart horse, but the leader's pad is of a lighter description, being as often as not on the same pattern as that for double harness. For attaching the leader, several plans have been adopted. It was once the custom to have eyes on the shafts, to which the leader's traces were fastened ; but this was a most reprehensible practice, for if the leader started, he at once pulled the cart on to the wheeler. Another plan is to have eyes attached to the tugs of the wheeler's traces, and to these the hooks of the leader's traces are fastened. There is very little to be said against this plan, the only objection in some people's eyes being that there is a rather large scope of trace between the wheeler and the leader ; and, in the case of an unskilful coachman or an unwilling leader, the front horse may get his legs over the traces should he hang back. The next matter is the bar—a sort of imitation of those used for four-in-hand work. A short chain is attached to the harness, and this chain supports the bar, which is connected by a short strap with another one, having a hook at each end, to which the leader's two traces are attached. This unquestionably looks smarter than the ordinary long traces, but a leader so equipped should be driven by a very skilful coachman. The traces are very much shorter than on the other plan, and, unless the wheeler be very well in hand and kept back, it is an easy matter to drop the leading bar upon the leader's hocks, and thus cause him to kick should he be that way inclined. Lately, however, what is called the continuous trace has been invented, in which one trace is made to serve the purpose of both leader and wheeler. In theory it answers, I believe, exceedingly well, but in practice the objection is that you cannot put on a leader just when you want him without changing the trace ; whereas, if the same metal eyes be affixed to the tugs of the wheeler's traces, one horse can be driven at pleasure. The leader, by the way, should have what are called loin-straps, that is to say, a strap crossing the loins, with a loop at either end ; and through these the traces pass to keep them from dropping unnecessarily to the ground. These should never be omitted, for a leader whose traces are slack from the hames to the end is apt to become very unmanageable.

The Tandem Cart—In olden days it was by no means uncommon to see two horses, fastened tandem fashion, drawing a four-wheeled vehicle. This, however, is a very unsightly arrangement, and there is besides a useless waste of power, for although tandem-driving is very good fun and excellent practice for driving four-in-hand, there can be no possible doubt that two horses harnessed abreast do more work than two placed one in front of the other. All sorts of two-wheeled carts are used for tandem, but the best are those which are rather high ; for, to drive a tandem comfortably, the coachman requires to be at some little elevation above his horses, just as driving four is easier from a coach than from a lower vehicle. A few years ago a Tandem Club was started, and a very nice cart was adopted as a pattern. It was built by Messrs. Holland and Holland, of Oxford Street, and could no doubt be seen by those who are anxious to start a tandem in proper style. The balancing of the cart, always an important item in the case of all two-wheeled vehicles, becomes additionally so when a tandem is attempted, for nothing looks worse than a tandem with the points of the shafts pointing towards the sky, while the groom on the back seat has to hold on like grim death to keep his position. The greatest care, therefore, is necessary in the adjustment of the back band, and of course in the arrangement of the seats. The weights should not press unduly upon the horse's back, but at the same time there should be no more than just sufficient play in the shafts to keep the vehicle level. This will always be found a matter of difficulty, as, if the coachman be light, and the groom heavy, the weight must of course be brought more forward, while, if the coachman be a heavy man and the groom a feather-weight, the back band will have to be rather shorter, so as to prevent excessive play of the shafts. The novice may be warned that neither the adjustment of the seats, nor the tightening or letting out of the back band, will accomplish all that is desired. There must be a compromise between the two, and it will take some little time to learn how a cart should be properly balanced, because the weight of each person riding in it has more or less effect upon the arrangements of the seats, and, of course, upon the tension of the backband.

The Leader—Tandem driving with a bad leader is indeed a sorry business : in fact, it may be doubted whether the best tandem coachman could drive with a bad leader, and consequently every pains should be taken to secure a suitable horse. Before the horse makes his first appearance in front, it is as well to give him a little preliminary training, and this may conveniently take the form of driving him in a field with a pair of long reins. He should be encouraged to go straight without having any weight to draw, as when descending a hill the leader in a tandem

has of course nothing to do, and very little more when travelling on the flat. If a horse be walked about, and will go straight until an indication be given him to turn right or left, the chances are that he will turn out a satisfactory leader, and if his trainer be an active man, who can run 400 or 500 yards at a time, the horse will be more likely to turn out well. When first harnessed to the cart, it may be well to have a man to run by his head for a short time, but special care must be taken to have the wheeler well in hand, so that in the event of any vagaries on the part of a new leader the vehicle may be at once brought to a standstill. If he should be given to shying or turning round, the sooner he is replaced by another the better, for there is no pleasure in driving an ill-sorted pair.

Driving—For the method of holding the reins and managing the whip, the reader is referred to the section on driving four-in-hand, but he may be warned that the handling of the



Reins for Tandem.

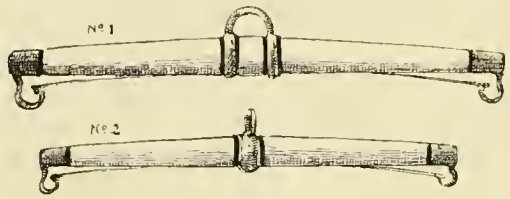
reins is more difficult in a tandem than on a coach, because there is no spread. All four reins run nearly parallel, consequently to pick up the near or off leading rein, or one of the wheel reins, requires greater nicety than in the case of four, when the angle is greater. Should the leader happen to turn round, or land the driver in any trouble, the wheeler should be immediately turned round after him. It will be almost useless for the novice to attempt to get the leader into position again, for as fast as he pulls him from one side he will probably go to the other, but, if the wheeler be turned round, both horses will be in line, and a fresh start will be made. In consequence of the difficulty, already referred to, of picking out any particular rein in tandem driving, sundry other methods of holding the reins have been suggested. Some tandem coachmen drive with what is called a full hand, that is with a rein between each finger : others again hold the hand as in riding, with the leader's reins outside and the wheeler's in, but neither of these, nor sundry other methods, obtain the sanction of coachmen, and those who drive tandem are therefore recommended to adopt the ordinary four-horse style, as by so doing they will be more at home in driving four horses than if they adopt a different method for each team.

The portioning of the work in a tandem is a matter of nicety. On the flat the leader is really required to do no work ; his traces should readily shake, and of course when going downhill he should be taken back an inch or two, so that by no possibility could he jump into his collar and pull the wheeler down. It is bad enough if the wheel horse falls in a four-wheeler when going downhill, but in a tandem the result is likely to be still worse, and, unless care be taken in the respect above mentioned, the chances of coming to grief are just double, because the wheeler may fall, either by treading on some loose stones or from some other cause, or he may be pulled over by the leader when he might otherwise keep his feet, and this will suggest that the pace downhill may be slightly slower, at any rate when a novice is driving, than if he were in charge of a single horse only. It is when going uphill, be the incline ever so slight, that the leader in a tandem becomes of real use. He may then be called upon to ease the wheeler. If the gradient be but gentle he need not be allowed too much play ; but when a steeper hill is met with, he may be allowed to do a good share of the work, and the position of the wheeler's collar should tell the coachman what share the leader is bearing in the draft of the vehicle. On other occasions the leader should be nursed, for driving a tandem with a tired leader is not a pleasurable occupation. For the same reason, too, no slug should be driven in the lead. A slow wheeler may be kept up to his work with a double thong, but if he be free and the leader a slug, the wheeler will be constantly annoyed by the sound of the point of the thong passing him. Mention of the whip reminds one that the coachman would do well to practice hitting his leader on both sides, for if he hit him on the right side only he will be very much abroad, should he attempt to drive four horses, when he tries to touch the near leader. To hit him neatly is a somewhat difficult operation, but more can be learned in five minutes by verbal instruction than by whole pages of writing.

Turning a corner with a tandem also requires some nicety. Supposing the coachman desires to turn sharply to the left the pace must of course be slackened, and the greatest care taken to keep the wheeler from following the leader too quickly. Every one who has ridden in a hansom cab knows how the drivers of these vehicles cut their corners, and if the indication be given too soon to the leader, and the wheeler follow him, it is easy to see that the vehicle will go on to the curb, or against any post that happens to be in the way. The coachman should see well round the corner before he

attempts to turn; the leader should then be pointed as for four-in-hand driving, and the opposite wheel rein should be kept tight to prevent the wheel turning too quickly. In driving through a carriage gateway, or into an inn-yard, especially if the road be not very wide, very careful management is required, and before attempting to make a turn, the tandem should be taken as far as possible to the opposite side of the road, so that as wide a sweep as possible may be taken.

DRIVING FOUR-IN-HAND.—Some of the remarks made in connection with tandem driving apply with equal force to the handling

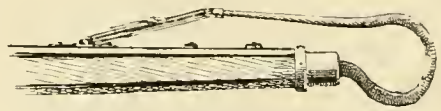


1. Main Bar.
2. Leader Bar.

of four horses, the team being really nothing more than two tandem teams placed side by side. The tandem may be the more "tricky" team to drive, but of course it stands to reason that four horses present more difficulties than do a tandem, for the simple reason that there are four horses to watch, to hold, to guide, or to urge forward instead of two, while it must not be forgotten that a great deal more strength is required to drive four.

In holding the reins, the near side leading rein is on the top of the forefinger of the left hand, the off leading rein being between the first and second fingers. The near wheel rein is also between the first and second fingers but underneath the off lead-rein, and then the off wheel rein lies by itself between the second and third

Pole.



Pole Hook.

Pole End.

fingers, so that there are two reins between the first and second fingers.

At the top of the pole is a hook, to which is fastened the main bar, while at each end of this bar is a hook on which the leading bars hang, each horse having a bar to himself. As in the case of other kinds of driving, the early lessons will of course be received from an instructor, who will hand the reins to the beginner, but the proper method of mounting may be at once explained. The reins will be found tucked away by the pad, and the coachman, taking the leaders' reins in his right hand, places them as already directed on each side of the first finger, the wheelers' reins coming beneath them. All four reins should be drawn nearly as tight as they will go without causing the horses to move, and, with the right hand, a little slack is given to the two off reins, the whole being then transferred to the right hand, the same fingers dividing them as before: the coachman mounts to the box, and changes the reins from the right to the left hand.

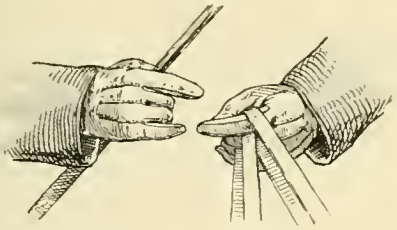
The coachman being seated (remember, his toes must never project over the footboard), the next thing is to start. This is apparently a simple operation, yet one which is attended with great difficulty, and not in one start in fifty does practice coincide with theory. Theory says that the wheelers must start the coach, for if the leaders come into their collars they are very likely to break a bar, yet as a matter of fact it is not always easy to make the wheelers start first, and if they do, there is just a chance of their driving the pole into the leaders' quarters, in which event one or both of them may kick, and lead to a complication.

It may at first sight seem to be an easy matter to stop this by shortening the leaders' reins, so that, should they start first, they may at least be unable to get into their collars; but if this plan be tried, and the wheelers do not start quickly enough, the leaders, as soon as they feel the bit, will probably come back towards the wheelers. Plenty of scope, therefore, should be allowed the horses at starting: and the best must be made of the attempt, but most coachmen will confess that in starting they are not always able to act up to their principles. When the horses are once in motion, a final adjustment of the reins can be made, and then it will be seen at what length they should be.

After some practice this will be found out, but at first, in fact, for some little while, they will generally be too long, and will require to be shortened. Very many of the old coachmen simply shorten all four by catching hold of them with the right hand behind the left, and pulling them through gently, adjusting the length of each rein by pulling it singly from behind; but this is, by the majority of modern coachmen, held to be the wrong way. Instead, the right hand is put forward to take hold of the leading reins to draw them back and shorten them, while the lower fingers draw back the wheel reins to the proper length, and place them over the third finger, the leading reins being then replaced.

Any minor alterations which may still be necessary are effected by gently pushing the reins through from the back, for it is a canon of driving that no rein should be shortened from the back, except, perhaps, the bottom one, or when all four require pulling back together. At the same time, there are plenty of men who follow the old plan of shortening their reins from behind.

Whatever may have been the case with driving tandem, any one attempting to drive



REINS FOR FOUR HORSES.

four-in-hand will find that for some time the reins are given to slip, the off lead and near wheel reins, which lie between the same fingers, being the greatest delinquents. This will generally cause the horses to go unevenly. The wheelers may be to the right and the leaders to the left, but they can be instantly put straight by taking hold of the two middle reins, the two that will be easier to handle, and pushing them back through the fingers. Should these two reins have been hauled tight, and the other two allowed to slip, the easiest way to get the team straight is perhaps to pull out the two middle reins, which will then enable the others to act. After that, all four should be shortened at once, and the outside reins will, or should, be *in statu quo*.

The presence of an instructor is absolutely necessary to any one who desires to drive properly, and the position of the hands will be one of the greatest difficulties the beginner has to contend with. His tendency will be to get his hand too far forward, in which case he will be thoroughly tired in less than five minutes, for he will be doing what is analogous to holding a weight more or less at arm's length. On the other hand, if his hand be too close to the body he will not be able to check his horses. A good plan is to let the elbow joint rest on the hip bone and be kept there, care being taken to keep the arm well to the side. This may give a little stiffness to the position, but it will help to keep the hand in the proper place, and the coachman should remember that whatever he does with his reins, whether he shortens them, lengthens them, or pulls either the one or the other, the left hand must always be kept still. This sounds easy enough in theory, but in practice it is exceedingly difficult, and it takes a long time thoroughly to acquire the proper habit.

Another difficulty the beginner has to contend with is that he will be at a loss to know the exact amount of force he is using. The weight of the reins is of course considerable, and, as the coachman sits higher than in a phaeton or dog-cart, it is naturally more felt. Still, as a kite string is not straight from the kite to the hand, so the reins are not perfectly straight from the terrets to the coachman's hands, except when in the act of pulling up, and therefore the coachman need not think he is necessarily doing wrong because the reins shake a little. In driving four, as in driving one, he should just gently feel the horses' mouths, always supposing they do not need any greater amount of restraint, and it will not be until after he has made several attempts at handling four horses that he will know when he is succeeding in doing this.

In turning corners it is easier to turn to the left than to the right, for the simple reason that the near leading rein is more easily found and grasped than the off, while it is also simpler to catch hold at once of the two off reins than of the two near ones. The plan generally adopted in turning a corner is, in the first place (we will suppose a turn to the left is to be made), to draw the horses to the right before approaching the turn, and, while the coachman is doing this, it will be a convenient time to tighten the off wheel rein a little, so that when the wheelers see the leaders turn they may be prevented from following too quickly. When it is judged that the time has arrived for turning, the right hand is placed on the top rein (the near lead) several inches in front of the left hand, more or less according to the sharpness of the turn to be made, and drawn back to the left hand, while the thumb should grasp the rein just in front of the point at which the right hand seizes it. This makes the top rein loop under the thumb, the effect being to shorten the near lead rein by the number of inches which intervened between the left hand and the right. The leaders are brought round, and, as they make the turn, the right hand is placed on the off reins to hinder the wheelers, who should turn in the tracks of the leaders, from coming round too suddenly. The whole team should not, as is so often seen, cut the corner. To turn to the right the process is reversed. The off leading rein is looped, and the two near reins are seized by the right hand in order to check the suddenness of the turn.

To seize the two near reins, however, is not so easy as holding the two off side reins. The right hand must be put forward outside the reins, which must be grasped with the whole hand, and not merely with a finger or two. Here it may be pointed out that great care should be taken when pulling either of the reins, singly or in pairs, to draw them in a direct line to the body, and neither to the right nor to the left. For instance, in making a turn to the left, the two off reins should not be drawn

to the right, but up to the buttons of the waistcoat.

A good deal of judgment is requisite in fairly dividing the work between the horses. In the case of a beginner the leaders, if at all inclined to be free, will do the bulk of the work, and when the leaders are doing too much, their traces will be tight, while those of the wheelers will be slack, and the collars will be hanging more or less loosely on their necks. The remedy for this is to shorten the leaders' reins, but, again it must be repeated, without allowing the left hand to fall forward. When ascending a hill the leaders may be allowed to do plenty of work, but in going down hill they should do none. In the ordinary way, with a good coachman, it is scarcely necessary to shorten the leaders going downhill, as, when the leaders come back and the reins are slipped through together, the normal position will hold good, and the leaders' traces will shake, or, in the language of the road, the leaders will be taken out of draught.

Pulling up, too, requires some little care. A beginner, even when driving the most perfectly broken team, will seldom or never have his wheelers quite so much under control that the slightest motion of his hand will serve to pull them up. He will generally find that at the best he has his wheel reins a little too long; consequently, when he expects his horses to stop they will not be receiving the necessary amount of pressure on their mouths. When approaching the gate or other point at which it is desired to stop, the embryo coachman should look at his reins and see whether they are at the proper tension, while a slight attempt may at the same time be made with the same object. If any of them are too slack, they should be pushed up gently through the fingers, and then the distance should be judged when to commence the operation of stopping. This should be accomplished very gradually by all coachmen, but especially so by the beginner, for nothing looks worse than what is known as a bad pull up.

The wheels of the vehicle should not be driven right into the gutter, nor should the coach be stopped several feet from the kerb, while to pull up a yard or two ahead of the proper place is an indication that the horses are not properly in hand. In all kinds of driving, but especially in four-in-hand work, a very great deal can be learned by the eye, and to sit on the box-seat of a drag or coach, when a good coachman is at work, gives ample opportunity for watching his every movement.

The Use of the Whip—In the hands of a coachman the whip is an article of the greatest value, but in the hands of an inexperienced and rash person it is a source of fruitful danger. A cardinal rule with every one who drives, whatever be the number of horses, should be never to use the whip at all without strict necessity, and in the hands of the beginner it should be strictly confined to causing a horse to accelerate his pace. It should not be grasped like an umbrella, but, when not wanted to touch a horse, it should lie on the thumb, under the fingers, steadied by the third and fourth fingers, an arrangement which leaves the first two fingers free to assist the left hand with the reins when necessary. This is the way to hold a whip, whether it be for two horses or four. To use it, it is with the generality of horses sufficient to draw it lightly over the body. There should be no flicking, and of course it should never be allowed to crack or make the least noise. Nor should any horse in harness be struck under the flank, or towards the quarters, a blow thus given being likely to cause him to kick.

In driving two horses, the whip is found useful in the hands of a good coachman as an aid. If in turning a corner, let us suppose to the left, the off horse hangs away from the turn and does not come round with his companion, a gentle touch over the shoulder causes him to flinch from the lash and take the required direction, while sometimes, if the near horse turns too quickly, a slight touch on his near shoulder will cause him to take things more leisurely. In driving two horses great care is necessary to hit the right horse and not the one which is already doing the bulk of the work. This sounds but a truism, but it is only after some little practice that one learns which horse it is that requires to be roused, even though it be but a little. In short, one of the obvious directions for the use of the whip is, use it as little as possible.

In tandem and four-in-hand work, the whip will be a sad difficulty in the hands of a beginner, and he should practice catching it most assiduously on foot, and have nothing to do with it while driving. It is not possible to give any lucid explanation of how a whip should be caught; all that can be done is to give a few broad hints. The thong of the tandem or four-in-hand whip is about double the length of the crop, but, when caught, the double thong is about the length of a pair horse whip. The point of the thong, that is to say, the thin end of it, is taken in the hand, which grasps the whip just below the thumb ferrule, about seven or eight inches up the whip. The crop should be held nearly, but not quite, horizontal to the ground, the elbow being at some distance from the right side of the body, and the knuckles pointing directly upwards. The next step is that three motions have to be made simultaneously. The knuckles should be brought vertical to the ground, the elbow should be dropped, while at the same time these motions will cause the crop to take a nearly vertical position, and while these are being made a slight circular movement should be given to the thong from left to right.

As the crop becomes perpendicular to the ground, the thong is thrown upwards, while the aforesaid slightly circular action causes it to catch about three or four inches below the quill of the whip; but it will be found that that portion which is round the stick coils two ways. About the centre it should be drawn out with the left hand, brought down into the right hand, and the point should be turned two or three times the reverse way round the whip, just below the thumb ferrule. This will keep the point of the lash from getting free. The description is soon given, but the attainment of the art is, to most people, exceedingly difficult. There must be no hitting at the thong with the crop, nor must the quill be held downwards, and the thong coiled round the stick. The whip will always be a difficulty until the art of catching it can be done instinctively, without either looking at the whip or thinking about it. In using it, care must be taken not to uncoil it when touching the wheelers, and, when hitting the off side leader, the point must touch him under the bar. The near leader must also be hit under the bar, but this exceedingly difficult operation cannot be taught in print. The coachman must be shown by a competent instructor, and he must then be content to sit either on a vehicle or on a pair of steps, and practice half an hour at a time for a good many days before he succeeds in making even a moderate success of the trick.

Brakes and Skids—It has long been debated whether a brake on a two-wheeled vehicle is an advantage or not. Of those who have tried them, some assert that, when descending a hill, the use of a brake in a dog-cart or similar vehicle tends to throw extra weight on the horse's back, while others are just as loud in its praise. To some extent the matter rights itself, because for a country in which precipitous hills are found a two wheeled carriage is not suitable, for, if the horse does fall, the chances are greatly in favour of a serious accident. Without therefore saying more than that it is, on the whole, better to have a brake on a dog-cart than not, because it need not be brought into use unless absolutely required, the statement may fearlessly be advanced that the fitting of brakes to carriages with four wheels is an unmitigated blessing to both horses and coachman.

In the olden days, when roads were bad, a hill was really less dangerous than it is now, for the soil was generally rather "woolly," *i.e.*, loose, and so the wheels bit well into the ground and the vehicle was thereby retarded; while, if the road chanced to be a hard one, there was generally some loose soil at the side for the benefit of the vehicle going down hill. Prudent persons used to skid when about to descend a hill which was at all steep in proportion to the weight of the vehicle, but in the stage-coach days, when opposition was rife, they did not always trouble to skid, and many an accident resulted in consequence. It was a great boon when the patent skid was invented. This worked on an arm, to which was attached a chain with a leather hand-piece, and in the leather was a hole which went over an iron button within reach of the coachman's right hand, thus keeping the arm up and the drag off the ground. The coachman needed no assistance in putting on the skid; he merely pulled the leather off the button, lowered the arm gently, and the pan dropped just in front of the wheel. At the foot of the hill the coachman backed his horses and hauled the whole affair up again. Then came the patent brake, which, in a crude form, had been used years before on the trucks on some of the Northumberland mines. Several kinds are in the market, but it is best to adhere to the pattern in general use, in which the brake is put on by drawing the handle back, and taken off by releasing it from its notch and allowing it to come forward.

To use the brake properly, some little knack is required. In a light vehicle, if put on suddenly to its full power, a distinct and disagreeable jerk is experienced. In the case of horses suddenly bolting underneath a railway bridge, for instance, as an unseen and unexpected train dashes along overhead — applying the brake suddenly cannot be helped; but when used at ordinary hills it should be put on gently at first. This will always be possible if the hill be taken, as it should be, in good time. Brake or no brake, the pace should be slackened as the crown of the hill is approached, and care should be taken that the horses are well in hand; but this does not mean that they should be violently pulled or held so tightly as to confine them unnecessarily. The exact moment for putting on the brake depends upon the fall of the ground, and must be left to the driver's discretion; but it should be at the spot where the ground begins to fall to the hill. Always go slowly off the crown of a hill, for if the horses once get the better of the coachman, he is scarcely likely to stop them before reaching the bottom of the hill.

The brake, though an excellent friend, can be made too much of. It is not wanted at every trifling gradient, and after a horse has been toiling uphill or drawing on the flat it is a relief to him to use some other muscles by getting out of draught—that is, doing no work. But if the brake be put on for every little descent, the wheels will be retarded, and the horse will have to draw the carriage just as though he were going uphill. At the same time, in order to be safe, an inexperienced person will require the brake far more often than will a finished coachman. The actual steepness of a hill alone will not decide whether the brake is to be used, and how much of it. In the first place, the weight of the carriage must be considered. A T-cart could

be driven at a good trot, where a well-laden coach would be skidded. Secondly, the state of the road has to be regarded. On an ordinary country road, after much rain, the ground will be so soft as to lend great assistance to the coachman; but in dry weather, if the road be hard, more brake will be required, while, on wood or asphalte, the smoothness of the surface and the absence of all bite increase the need for the brake. When you have to stop to make a call or enter a shop, put on the brake; it will help to keep the carriage still, while, if the horse does walk away, the noise of brake and wheels grinding together will give you notice of the fact. (Always see that the brakes are in good order and do not need reblocking.)

Save in very hilly countries, skids are not often used with light vehicles. They are merely lifted off the hook and placed straight in front of the wheel, and the chain should be so adjusted as to allow of the pan lying perfectly under the wheel. Before the skid is taken off the vehicle the latter must be backed, and the novice may be warned not to catch hold of the pan itself in his attempt to lift it to its hook. If the hill be long and the pace a trot, the iron becomes far too hot to be touched by the hand.

W. C. A. Blew.

Glossary.

Axle—The rounded ends of the *axletree*, a timber running transversely beneath the carriage. Upon these the wheels revolve, the bearings being enclosed in the axle box. In the *Collinge* axle this box is secured upon the arm by two nuts screwed right and left.

Axletree—The pin which passes through the middle of the wheel upon which the circumvolutions are performed. Axles are of two kinds—Collinge's and the mail coach pattern.

Backband—A broad strap or chain passing over the saddle pad of a cart or carriage horse, used to support the shafts.

Bars—The timbers to which the leaders' traces are attached in tandem, unicorn, or four-in-hand teams.

Bearing Rein—A fixed strap which is fastened at one end to the bridle, at the other to the hook on the saddle pad. By its means the horse is prevented from dropping its head, and is made to appear more showy, and is said by some drivers to be better under control. A more severe form is known as the *Gag bearing rein* or *Gag*. This strap is first attached to the headpiece, then taken through a swivel on the bridoon and then goes to the hook on the pad.

Bellyband—A broad strap attached to the shafts of a vehicle by the saddle pad, and passing closely beneath the body of the animal drawing it.

Billets—Short straps used to connect the various parts of the harness.

Bits—The steel contrivance attached to the bridle inserted in the horse's mouth, to which the reins are attached. Bits are of many patterns, but for all practical purposes they may be divided into few classes. The only snaffle used for harness horses is the ring snaffle, which has two rings at each end. To drive double ring is to buckle the reins to both rings. To drive single ring is to buckle the rein to one ring only, so that when the rein is drawn it acts through the other ring; this is a severer form. Of curb bits there are the Liverpool and Buxton patterns. The former has a mouthpiece which shifts up and down; it has its advantages, but is liable to pinch a horse's lips. The Buxton was invented by an amateur of that name. The ports are of different heights, and of late years bits with india-rubber mouthpieces have been used.

Blinkers—Leather flaps placed by the side of a horse's eyes in order to prevent him from seeing anything except what lies straight in front. Also called *winkers*.

Body Roller—The band or girth fastened round a horse's body on the top of the clothing.

Boot—The receptacle for parcels or luggage on a coach, underneath the seats of guard and coachman.

Boot-tread—The iron step on the front boot used in mounting the fore part of a coach.

Bore—A horse is said to bore when he gets his head down and leans on the bit, and as a consequence on the coachman's hands.

Box—The seat upon which sits the driver.

Box Seat—For which an extra charge is made. The seat next to the coachman.

Brake—(1) A block of wood or iron faced with leather or india-rubber pressed by a lever at will upon the tyre. Its application to coaches was devised by a Mr. Tongue about 1824. Its original name was a "Coach Retarder," but long before that some contrivance in the nature of a brake had been used on trollies in coal-mines. (2) A large, high-set four-wheeled open carriage, with a straight body, and a cross seat in front for the driver.

Breast Harness—A form of harness adopted occasionally, which does away with the collar and gives the horse a breast-strap instead to work against.

Breeching is connected with all the harness upon a horse's hind quarters, which consists of the *crupper*, a divided strap which is slipped over and behind the horse's tail; the *crupper dock* connecting this with the saddle. The *breeching* is the strap which passes round behind the horse, and helps him in backing and stopping a carriage.

Bridle—That part of the harness which is put upon the horse's head. It consists of a long strap or *cheekpiece* running down the horse's head, to which are fastened the *blinkers* by the eye, the *headpiece* running behind the ears and the *bit* in the horse's mouth. The *noseband* goes round the head above the nostrils. The *browband* or *frontal* passes from the top of the cheekpiece around the forehead, and the *throatlash* from the same point passes round beneath.

Bridoon or Bradoon—The separate snaffle bit to which in harness the bearing rein is attached. In the case of saddle horses the bridoon is another name for the snaffle of a double bridle.

Browband—[*See* Bridle.]

Cavesson or **Cavezon**—A noseband put upon a horse's nose in order to wring it if he be obstinate or unruly during the process of breaking him in. It may be made of iron, wood, or leather.

Chaunting or **Chanting**—Originally the singing of a horse's praises above its worth; hence generally the cheating of a purchaser of horses.

Cheekpiece—[*See* Bridle.]

Cheek of the Bit—The portion outside a horse's mouth.

Chin-groove—The groove in the chin of a horse wherein the curb chain lies.

Clicking—The noise made by the heel of a hind shoe striking against the fore shoe. It is also called *Forging Foot* when trotting.

Coaching Club—Founded in 1870, through the instrumentality of Mr. G. Goddard, under the presidency of the Duke of Beaufort. Hyde Park is fixed for the first meet and, of late years, the Horse Guards parade for the second.

Cockeye—A slang name for the loop at the end of a trace, by which it is attached to the carriage or to the bar.

Collar—A roll, heavily padded with straw and covered on the outside with leather, which is passed over the horse's head and rests closely upon his shoulders. To it are attached the hames and traces, along which the draught acts.

Collar of Whip—A metal band around the handle of

the whip, at the point, usually about 7, 8, or 9 inches from the end, where it balances easily. Also called *thumb ferrule*.

Coupling Reins are the crossed inner reins which run from the *draught rein* (*q.v.*) of one horse to the inner side of the other. A horse's coupling is that rein which runs to the inner side of his bit. Hence to alter the near horse's coupling is to take up or let out the rein on the other horse's draught rein.

Crossing Traces is the device of fastening the inside trace of one leader to the inside bar of his partner. The practice is resorted to with the idea of keeping the bars even when one horse is freer than the other.

Crupper—[*See* BREECHING.]

Curb—A chain or strap used for rendering a bit more powerful. It passes under the lower jaw and is fastened to the upper branches of the bit. The curb-rein forces it powerfully against the jaw.

Dash Board or **Splash Board**—A board or leather apron, which is placed in front of a vehicle and over the wheels to prevent mud from being thrown up, either by the heels of the horse or by the rotation of the wheels.

Dock—To cut off the end of a horse's tail with a view to the improvement of its appearance. This is now declared to be cruelty, and punished by fine or imprisonment.

Double-thong—*Verb*, to hit the wheelers with the thong of a four-horse whip when "caught."

Noun, when the whip is not required for the wheelers.

Drag—A coach kept for pleasure and not for the carriage of passengers from place to place. Also the skid or slipper is sometimes called the drag.

Draught Reins—The outer rein of each horse, contrast with the *Coupling Reins*.

Dumb Jockey—A wooden contrivance fitted on to a horse's back; from its arms are india-rubber and leather reins. It is used for mouthing young horses.

Felly—The rim of a carriage wheel, usually composed of curving sections of wood, into which the spokes are run and secured.

Fillet-strap—An ornamental strap lying across the back of the horse between the saddle pad and the *Hip-strap* (*q.v.*). This part of the horse is itself sometimes called the *Fillet*.

Foot-board—The sloping board upon which rest the feet of the coachman and box-seat passenger.

Fore-carriage—The under part of the coach to which the fore-wheels are attached.

Forehead-drop—An ornamental strap hanging down from the browband over the horse's forehead.

Four-in-Hand Club—Formed in April, 1856, under the presidency of the Duke of Beaufort, the secretaries being Mr. J. L. Baldwin and the Hon. L. Agar-Ellis. The number of members is limited to fifty. The Club holds two parades a year, the first at the Magazine in Hyde Park, and later on the Horse Guards' Parade at six o'clock in the evening preparatory to driving to the Crystal Palace. This second meet is held on Thursday—firework night at the Palace.

Futchells—Longitudinal pieces of timber between which the pole fits.

Hames—Curved pieces of wood or metal which are fixed upon the collar and have attached to them the traces.

Hammercloth—A cloth covering the driver's seat.

Hand—The unit of a horse's measurement. Equivalent to 4 inches.

Hand-pieces—That part of the reins which comes to the hand of the coachman.

Hang off—Of the horses, to pull sideways from pole or partner.

Head-piece—[*See* BRIDLE].

Head-stall—Any arrangement of straps or cord which encompasses the head, whether it be a bridle or a halter.

Hip-strap—A strap passing over a horse's hind-quarters and fastened on either side to the *Breeching Body*. Also called *Quarter-strap*.

Jibbing—Moving restively sideways or backwards.

Jobbing—The letting out on hire of carriages and horses.

Kicking—The old term for the custom of guards to ask travellers for a tip or special fee. Also called *Shelling*.

Kicking-strap—A stout strap hanging loosely behind the horse's hind-quarters and preventing him from throwing up his heels.

Kidney-link—A link on the hames of the horse's collar to which the pole-chains are fixed.

Lamp-irons—The irons projecting from the body of the coach and fore boot into which the coach lamps are placed.

Lapping traces—Passing the inside trace of a leader round the inside trace of his partner and taking it back to his own bar.

Leaders—The two front horses in a four-in-hand are called leaders, and referred to frequently as "before the bars."

Leading-bars—[*See* SWING-BARS and WHIPPLE-TREES].

Lock—Of the wheels; to jam, either accidentally in turning, or intentionally by a *skid* (*q.v.*) or hook and chain attached to the felly. A vehicle which can be turned round sharply like an omnibus or brougham does not lock; but if an attempt be made to turn a coach in a narrow road it locks, *i.e.* the wheels catch the body.

Lozenge—The slang term for a circular piece of leather with a hole in the centre to fit round the mouth-piece of the bit and having a slit from circumference to centre which enables it to be slipped over the bit. It is used for horses which bear away or *hang off* (*q.v.*).

Main-bar—The cross timber fixed to the pole-head, from which hang the *Swing-bars* or *leading bars* (*q.v.*).

Martingale—A strap which passes from the bridle under the collar and is fastened to the bellyband. It is intended to prevent the horse from throwing up his head.

Milling—Old term for kicking in horses.

Nave—The centre of the wheel, from which the spokes radiate.

Near side—The left-hand side of the road, vehicle, horses, or driver.

Nicking—Making an incision at the root of a horse's tail in order that he may carry it higher.

Noseband—[*See* BRIDLE].

Offside—The right-hand side of the road, vehicle, horses, or driver.

Opposition point—Keeping a strain on the right reins when turning a corner to the left, and *vice versa*, in order to prevent the horses from turning too soon and not leaving room enough for the carriage.

Pad—A light form of saddle, used in some sets of harness.

Perch—The pole connecting the fore and hind part of a carriage.

Pickaxe team—A team consisting of two wheelers and one leader. Also called a *Unicorn* team.

Point—To give the leaders an intimation by the reins that they are about to turn a corner.

Pole—The longitudinal timber that is set between the wheelers, to which they are attached by the *Pole-chains* or, in some kinds of vehicles, by *pole-pieces*.

Pole-head—The metal fitting to the front end of a pole which carries the pole-chains or pole-pieces.

Pole-hook—The hook at the top side of a coach pole on which the main bar is hung.

Pole-pieces—Wide leather double straps which in broughams, victorias, and some other description of carriages are used instead of pole-chains. They run from the pole-head through a kidney-link in the harness. It is by means of the pole-chains or pole-pieces that horses in double harness are enabled to "hold" a carriage when descending a hill, and to stop it.

Poling up—Adjusting to the proper length the pole-chain or pole-piece.

Postilion—A driver who rides at the same time. If there be four horses he rides the near leader, and a driver

on the box the wheelers; if a pair he drives both from the near horse.

Pull—Of the horse; to be always straining heavily on the reins whatever the pace.

Quarter-strap—[*See* HIP-STRAP].

Rearing—To stand erect, or to attempt to stand upon the hind-legs.

Reins—The straps, usually about an inch broad, fastened on either side of the horse's mouth, and carried back over the harness to the driver's hand.

Road cribbage—A game much played in old coaching days in which opposing parties took different sides of the road and scored points according to agreement for various selected natural objects such as cows, sheep, pigs, &c. Also called *Road Game* and *Road Piquet*.

Roller-bolts—The four protuberances on the splinter-bar over which the loops of the traces of horses in double harness are slipped.

Roughing—Altering a horse's shoe in slippery weather in order to give it a firmer hold of the ground.

Saddle—In driving, a pad laid across the back of a horse. The backband runs over the top, and the shaft tugs are supported from it, the bellyband running from the same point underneath the horse. The reins run through rings upon the top of it.

Shafts—The bars between which a horse is fastened to a carriage.

Shelling—[*See* KICKING].

Shooter—A name given to coach guards in the olden time. Various reasons have been given for the appellation, but the real origin is a matter of doubt.

Shouldering—(1) Of the horse, pushing sideways upon pole or partner. (2) Of the guard and coachman, picking up short-distance passengers on the road whose names were not entered on the way-bill, and whose fare was therefore secured by the guard for himself and the driver. Such passengers were called "*Shoulder-sticks.*" At the dinners given by the great coach proprietors to their guards and coachmen a standing toast was "Shouldering—but don't let me catch you at it."

Shy—To spring suddenly either sideways or backwards from fear, or from excess of spirits.

Skid or Slipper—An iron shoe with flanges retained by a chain from the perch or axle, which fitting under the hind-wheel prevents its revolving. Now practically superseded by the brake except for very steep hills.

Snaffle—A bridle with a light bit and unprovided with a curb.

Splinter-bar—The 'transverse timber to which the wheelers' traces are affixed.

Split quarter-strap—A variety of the hip or quarter-strap, in which the strap is divided about half-way down the horse's side, and attached to the breeching in two places.

Spring—Of the coachman; to put the horses to a gallop.

Stage—The distance travelled by one team of horses.

Stops—Hooks upon the shafts which prevent the harness from slipping forward.

Surcingle—A girth which passes under the saddle and keeps some object, such as a blanket or sheet, tightly upon the horse's body.

Swing-bars—The transverse timbers swinging from the main-bar (*q.v.*) to which the leaders' traces are affixed. Sometimes called swingle-trees.

Tandem—Two horses driven, not side by side, but one in front of the other.

Terrets—The loops or rings upon the saddle pad through which the reins pass.

Throatlash—[*See* BRIDLE].

Top ferrule—[*See* COLLAR OF THE WHIP].

Trace—The stout straps passing from the collar to the splinter-bar along which the horse's draught acts.

Tugs—Stout loops of leather, depending from the saddle pad, through which the shafts are inserted. Also called shaft tugs or shaft loops.

Under carriage—That part of the coach which supports the body.

Unicorn team—[*See* PICKAXE TEAM].

Wheelers—The two horses attached directly to the coach, and next to the driver.

Winkers—[*See* BLINKERS].

DUCK SHOOTING—One hundred years ago the bulk of the wild fowl exposed for sale in English markets came from the Eastern counties and Somersetshire, and were taken in decoys. Since then, the gradual extinction of their old haunts, and the increase of population, have brought about, as regards season and locality, changes in the habits of the fowl, which have to be met with new methods of pursuit and capture, so that now the vast majority of ducks killed in the season in the British islands are shot with the gun.

In the first period, the killing of wild fowl was practically the work of a few; now, through the great increase of both professional and amateur sportsmen, it has become open to the many.

The ancient goose and duck gun, once such a common feature in the farmhouses of the maritime marshes of the Eastern counties, is extinct, except in museums. As we remember it, it had an extraordinary length of barrel and a flint and steel lock, yet these old rough-stocked pieces had a history. We would their chronicles had more fully survived, for they would have completely thrown into the shade the much-vaunted records of modern sport.

Roughly speaking, contemporary duck-shooting may be divided into three parts. First comes shooting with staunchion guns, in single or double-handed gunning punts; this is by far the most certain method of getting birds; at the same time it is one requiring the greatest amount of exercise, forethought, and skill, with exposure in all weathers, to say nothing of frequent disappointments and risk of life. Then there is shooting "at flight"—that is, at dusk, when ducks get on the wing and leave their resting-places for their feeding grounds on land or along the muddy shores of tidal estuaries, river-flats, and foreshores. This is a very ancient habit, for in the days of decoys the fowl always rose in a body in the evening and spread themselves over the adjoining lands. Our forefathers called this flight the "rising of the decoy," and the daily event was accentuated by the roar of wings, heard miles away, on a still evening in the dreary fens of the Eastern counties.

Thirdly, ducks may be shot by day, either by driving on preserved water or along the coast in severe weather, or by following open streams or drains at early dawn in districts where they are known to resort when the weather is very hard. In this latter case, duck-shooting can be followed not only in the day but on light nights, by visiting the spring-heads and open waters so long as they continue unfrozen. The results perhaps are not always equal to expectation, but we have always found the fascination of these

Duck Shooting

lonely wanderings in an Arctic solitude, and beneath the silent midnight heavens, a quite sufficient return for a comparatively small bag. Two guns at most are admissible, for the creaking of frozen snow on a still night can be heard by the quick-eared birds at a great distance. Even two shooters are apt to exchange ideas, and we have always done best alone.

Since the passing of the "Wild Birds' Protection Acts," there has been a very gratifying increase both in numbers and extension of range of several of the most valued species (as regards food supply) of ducks nesting in Great Britain. This is notably the case with the Mallard, Teal, Gadwall, Shoveler (and probably the Pintail), Wigeon, Tufted-duck, Pochard, and Sheld-duck. Of these, the first six are surface-feeders, obtaining their food on land and water without diving, and, as a rule, frequenting fresh water. The Wigeon is more often a coast feeder. These are all desirable in a culinary sense. The Pochard, Tufted-duck, and Golden-eye are expert divers, and these also feed much on fresh waters, and are valuable as food. The true sea-ducks, all expert divers, as the Scaup, Long-tailed duck, Eider, and the two Scoters, rarely leave the sea, and their flesh is worthless. The Sheld-duck is also valueless as food, although the eggs are considered a delicacy. The quality of a duck's flesh is dependent on its food, and even the best vary much according to the district they come from.

The ranks of home-bred birds are increased greatly in the later Autumn by immense arrivals from the Continent, coming from countries both northerly and easterly of Great Britain. Of these the Wigeon is the most common, and makes the best return to those who use a punt, for it flies in dense companies of hundreds and thousands, and, as the tide rises, they crowd the higher banks and elevated spots as long as these remain uncovered, so that, with luck and good management, 70 to 100 may be gathered after a shot. Taking into consideration the perfection of modern appliances, the bags of the present are far less than formerly. Punts one hundred years ago were either floating coffins or lumbering tubs, carrying a swivel-gun with its muzzle elevated like a telescope. Mr. Lubbock tells how an old man, who had the run of Breydon Water, with a piece destitute of any trigger-guard, which he called "Old Peggy," killed 83 fowl at a shot.

A modern punt may take either a single or double-barrelled breech or muzzle-loader, with a charge of 6 to 8 oz. of powder and 2 to 2½ lbs. of shot. A gun designed by Sir Ralph Payne-Gallwey had an oval bore, with major axis parallel to the water, so as to throw and scatter a lateral belt of shot.

Sportsmen differ as to the best gun for flight shooting. We have tried all sorts, and never found anything better than an ordinary 12 bore, 7½ lbs. weight, with 3½ drachms of powder, and 1¼ oz. of No. 4 shot—left hand barrel choke. With a heavier weapon, the weight becomes a burden to the flesh. When ducks come to their feeding-grounds they invariably fly against the wind. On calm, still nights they pass too high for a shot; a strong wind at the back of the shooter and against the ducks offers the best chance, particularly if the gun faces the light in the west. The time of passage is very limited, fifteen minutes to half an hour. If you want to kill, do not fire at your birds as they come, but sideways, high, and after they have passed. On a recent occasion on the Holderness coast, on an evening when ducks flew low and slow against a strong wind, a young farmer killed eighteen couple within half an hour, only desisting because his barrels got too hot. At this sport a steady retriever is required, or half the birds will not be gathered. Much disappointment will be saved by finding beforehand the places where ducks come to feed.

Mallard, Wigeon, and also Scaup come up from the sea at dusk to the muddy foreshores of bays, estuaries and tidal rivers to feed on the sea grass (*Zostera marina*), of which they are immoderately fond. It is a common practice amongst coast-fowlers to sink a barrel, or, better still, to dig a hole in the muds, deep enough to cover the shoulders of the shooter; a flat piece of board should be fixed for a seat, and the hole can be made quite comfortable if lined with a piece of matting. A full moon is the best, with a slightly overcast sky. We have had excellent sport, but of course some nights are blanks.

Large numbers of Mallard, Teal, Tufted-duck, and, in a less degree, several other species, are bred on private waters in Great Britain. Their greatest enemy, when the broods are hatched, is the pike. The ducks are shot in the autumn after they have been joined by immigrants from the Continent. Thanks to the "Wild Birds' Protection Acts" the abominations of what used to be called "flapper-shooting" are at an end. With legitimate sport in the proper season, these sanctuaries afford excellent shooting. Discretion is necessary not to overshoot, otherwise the fowl would be driven to seek a quieter retreat. Permanent shelter-screens are placed round the ponds or lakes in the best places for guns. The ducks, when disturbed, rise in a body, perhaps 800 to 1,000 on the wing, at once; these soon break into small flights and spread in every direction, but after a short interval reappear at their old haunt by twos and threes and give excellent shots. We know of one such preserve of one hundred acres, with about ten acres of ponds, where 500 to 600 ducks may always be seen. It is shot lightly, from 100 to 200 head annually. The home-bred ducks are as a rule less wild, and heavier and finer birds than the foreigners:

practically, too, they spend their lives in a state of semi-domestication.

Out of thirty-one species—ducks and mergansers—included in the British *avi-fauna*, sixteen must be classed as residents (*i.e.* they have nested, more or less), three are winter visitants, and twelve occasional.

Ducks can rarely be approached at sea by sailing-boats, that is by going directly for them, but a skilful boatman, who is well up to the work, will often enough bring his craft within shooting distance. Duck shooting has many phases, and some of the Continental methods of pursuit differ materially from those of England. Sometimes, as on the great lakes of Sweden, the bow of a boat is masked with green branches and allowed to drift slowly down into the vicinity of the fowl, till the concealed sportsmen can open their battery. Ducks are also tempted within reach by decoy birds, or excellent imitations of the same. In America various schemes are employed to attract ducks within range, and numbers are shot from concealed boats, tubs, and artificial islands, as well as by combined boat attacks. In every case, however, the design is the same, to make a bag.

The literature of duck shooting would form a library in itself, from the classic works of H. B. Daniel, Hawker, and Folkhard to the inexhaustible files and pages of *The Field* newspaper, where every point connected with wild-fowl shooting has again and again been threshed out. To those interested in the subject and wishing to increase their knowledge, information will be found to the most minute details in Sir R. Payne-Gallwey's *The Fowler in Ireland*, and in his *Letters to Young Shooters*, third series: also in Mr. Abel Chapman's *Bird Life of the Border*, and in *The Art of Wild-fowl Shooting*, all works excellent of their kind.

JOHN CORDEAUX.

DUNLIN—[*See* SANDPIPER].

DUIKER—The **Duiker**, or **Duikerbok**, (*Cephalopus mergens*), *Puti* of the Bechuanas, *Impunzi* of the Matabele, is a small antelope, standing some 26 inches in height, found singly or in pairs all over South Africa, as well as in Nyasaland, Angola, and other localities. Besides the common duiker, other varieties are to be found in various parts of Africa. The duiker frequents by preference bush, or thin forest, where scrub and covert are plentiful. It is, however, common enough in open country, wherever patches of bush occur. And in the deep, jungly kloofs of the mountain ranges it is also abundant. The duiker falls more often to the shot-gun than to the rifle, and, at fairly short range, succumbs readily enough to a charge of No. 2 shot. It is a shy, wary little beast, and has a habit of squatting and diving among the coverts it frequents, and its name, which, rendered from the Dutch, signifies diver or ducker, explains very aptly its somewhat sneaking, furtive attributes. In colour this antelope varies a good deal, the coats of individuals, even in the same locality, running through the whole range of hues between greenish and yellowish brown. A yellowish or reddish brown, tinged with green or gray, is the more common. The male carries short sharp horns not exceeding $5\frac{1}{2}$ inches in length. The female is hornless. A tuft of hair between the ears is very characteristic. The duiker is frequently shot by the gunner when in pursuit of game birds. It has plenty of pace and staying power, and stands well before fox-hounds. In Natal a small bright bay species is found (*C. natalensis*), known as the Natal red-buck, the male and female of which both carry horns. The flesh of the duiker is moderately good eating.

DUIKER.

Ht. at shoulder, 26 in.; Av. length of horns, 4½ in.; Max. length, 5½ in.

H. A. BRYDEN.

EEL. (*Anguilla vulgaris.*)

MEASUREMENTS, ETC.—Lower jaw the longer; length of head $2\frac{1}{2}$ to $2\frac{3}{4}$ in the distance from the snout to the origin of the dorsal fin, and from $3\frac{1}{2}$ to $3\frac{3}{5}$ to the commencement of the anal fin. Body cylindrical as far as the anus, posterior to which it becomes more and more compressed. Lips broad and fleshy (*latirostris*), or narrow (*vulgaris*); the maxilla extends backwards to beneath the middle or hind edge of the eye. *Eye*—rather small, diameter 8 to 12 times in the length of the head; about $1\frac{1}{2}$ to 2 from the end of the snout $1\frac{1}{2}$ apart. *Teeth*—cardiform in the jaws and vomer. *Fins*—the dorsal commences far behind the head as already observed. The anal arises about the length of the head behind the origin of the dorsal fin, and a little in front of the middle of the total length. *Scales*—small ones under the epidermis and imbedded in mucus. *Colours*—variable, generally dull olive along the back, and white or yellow along the abdomen, fins darker than the body, except the first third of the anal. Among the outward signs by which a male eel may be recognised, says O. Hermes, is a very striking metallic or bronze colour.—Day's *Fishes of Great Britain and Ireland*, vol. 2, p. 242.

ELAND.—The Eland (*Oreas canna*), *Pofu* of the Bechuanas, *Mpofu* of the Matabele and Zulus, as well as of the Swahilis of East Africa, is the largest antelope in the world, and is found only in Africa. There are two varieties—the unstriped Eland, whose range seems never to have extended much north of Lake Ngami, and the striped or Derbian Eland (*Oreas derbianus*), discovered by Livingstone, which, towards the Zambesi and thence northward into the African continent, takes the place of the more southern, desert-loving, and unstriped Eland. The unstriped Eland attains greater dimensions than its striped congener, although it frequents by preference much more waterless and desert country.

At the present time, bull Elands may still be found in the northern portion of the Kalahari standing 6 feet at the shoulder and weighing 1,500 pounds or more. Instances are on record of these magnificent creatures measuring no less than 6 feet 6 inches (19½ hands) at the withers, and weighing 2,000 lbs. But, thanks to incessant persecution, Elands of the present day can seldom hope to attain such weight and measurement. The cows are considerably less in weight and height than the bulls. The colour of a herd of Elands varies greatly. The younger animals are of a rufous fawn; in the intermediate stages the colour is of a paler fawn or dun; while in the old bulls and cows the hair becomes much thinner with age, the skin shows through, and the body colouring is of a slaty blue. The coat is as smooth as that of an Alderney cow. The head, especially in the bulls, is small, neat, and game-like. The bulls are easily singled out by their much greater size and bulk, their shorter and more massive horns, and the thick bristly tuft of bright brown hair which stands out from the forehead just beneath the horns. The body is exceedingly massive, the shoulders are very deep, and a broad dewlap depends towards the knees. The legs are clean.

Although so frequently found in purely desert country, the Eland puts on flesh and fat in a quite amazing way. Even in the dry season of the South African winter the writer has hunted and killed these antelopes in the waterless recesses of the North Kalahari, and found them fat and in high condition. The flesh is excellent; tender, juicy, and partaking of the flavour of young, game-like beef—if such a combination can be imagined. The horns of a well-grown bull attain occasionally a length of 31 or 32 inches and are extremely massive at the base. The horns of a cow will sometimes reach a length of about 34 inches; but they are slimmer and less deeply marked in the twist than those of the male.

In the old days Elands must have been extraordinarily plentiful in every part of South Africa, down even to the shores of the Cape Peninsula. Their name yet lingers throughout the country, and Eland's Drift, Eland's Kopje, Eland's River, and Eland's Fontein, are amongst the commonest of South African place-names. But even in the days of the flint-lock the Eland was always one of the easiest of all game animals to shoot. Its flesh and skin were always in high demand; it was everywhere eagerly pursued; and at the present day, except in the difficult recesses of the Kalahari Desert, the old unstriped Eland of the Cape (*Oreas canna*) may now be looked upon as a vanished quadruped. In the Cape Colony, Great Namaqualand, Zululand, the Transvaal, the Orange Free State and Bechuanaland as far as the tropic of Capricorn it is extinct. Yet Cornwallis Harris in 1837 describes this noble beast as frequenting the

Bull Eland.

Av. height, 72 in. Av. length of horns, 28 in.; Max. length, 34 in.

plains of the interior, *i.e.*, middle Bechuanaland, the Transvaal and Orange Free State, "in vast herds." A few are still preserved by the Natal Government in a corner of the Drakensberg Mountains between Natal and Basutoland. In the Kalahari, or desert portions of the Bakwena and Bamangwato countries—the territory of the chiefs Sebele and Khama—the Eland is now first encountered as the traveller passes north. In all this northern region of the Kalahari, and westward towards Lake Ngami, the unstriped Eland still roams in large herds. The writer has encountered them in recent years between Kanne and Inkouani in troops of between thirty and forty, and still larger herds exist. It is a fact that these desert-bred Elands can and do

exist without water for seven months in the year, in common with the gemsbok, giraffe, duiker, and steinbok. In the Ovampo country, west of Lake Ngami, Elands are still found. Here and in Portuguese West Africa, however, they are striped. North of the Botletli River, and in Matabeleland, Mashonaland, and Portuguese South-East Africa, the striped variety of Eland is still to be found, occasionally in big troops. Thence into Africa, as far north as Senegambia on the West and British East Africa on the East, the Derbian Eland, distinguished by its white stripings, is to be found.

Of all African beasts of chase the Eland is the most readily killed. In South Africa, where game can be hunted on horseback, nothing is easier than to ride into a troop and turn out and shoot the fattest and most desirable specimen. Occasionally the Eland can be driven right up to the hunter's wagon and slain there. The Eland has no defensive powers whatever. Sometimes, however, in more hilly country, or where the animals are in low condition, the cows will give some trouble even to the mounted man. As a rule the hunter can, after five or ten minutes' gallop, ride right up to his quarry and shoot it without trouble from a saddle. Such is the writer's own experience. When thoroughly blown the Eland breaks from its gallop into a slinging trot, and the hunter may then easily know that the game is his. A Martini-Henry sporting rifle, a ·450, an Afrikander, or indeed any handy rifle, is sufficient to bring down an Eland, which is one of the softest and most easily killed of African game. In East Africa the Eland is principally stalked on foot, or driven by native beaters in the direction in which the sportsman lies concealed. The head of an Eland, especially of a good bull, forms an admirable trophy; yet these noble creatures are so easily shot, and are vanishing so rapidly, that the hunter may well content himself with a few good specimens.

At the present day in South Africa, the Eland is seldom encountered in wide open plains. It frequents by preference moderately bushed country or thin forest. In East Africa, however, it is still to be found on the open plains.

H. A. Bryden.

ELEPHANT, AFRICAN (*Elephas africanus*)—Though somewhat less in bulk and stature than either the Mastodon or the Mammoth—its vanished prototypes of prehistoric times—the African elephant is to-day the mightiest beast which yet exists upon our planet; and although we have unfortunately but scant data to go upon regarding the maximum size ever attained by the largest males of the species, I think I shall not be far wrong if I put the standing height of average sized animals at from ten feet to ten feet six inches. I have arrived at these figures not only from measurements taken by myself, but also from a study of what has been written on the subject by such practical sportsmen and naturalists as the late Colonel Sanderson and Sir Samuel Baker. According to the last-named eminent authority, the African elephant exceeds the Asiatic species in both sexes by about a foot in standing height at the shoulder, and as Colonel Sanderson has shown very clearly by an exhaustive series of measurements that the average standing height of the male Indian elephant is from nine feet to nine feet six inches, that of the African species should be from ten feet to ten feet six inches if Sir Samuel Baker's estimate of the average difference between the two be correct.

This accords exactly with my own experience, for of five ordinary full-grown bull African elephants whose standing height I carefully

Head of African Elephant.

Av. height at shoulder, 10 *ft.* 3 *in. Av. length of tusks*, 7 *ft.* 6 *in.*; *Max. length of tusks*, 9 *ft.* 5 *in.*

measured by taking the distance in a straight line between two poles placed exactly parallel to one another and fixed upright in the ground, the one at the sole of the forefoot, and the other at the top of the shoulder of the dead animal, one stood nine feet eleven inches, two exactly ten feet, one ten feet four inches, and one ten feet six inches.

But, just as in India some few elephants are known to have much exceeded the ordinary dimensions of the species, so also in Africa it may be supposed that animals occur from time to time of exceptional stature. The late William Cotton Oswell, in the account of his African hunting experiences contained in the volume on Big-game Shooting of the Badminton Library, says: "I have seen thousands of elephants, and shot the largest one I ever saw. I measured him, and he was twelve feet two inches."

I have also heard of other measurements of well over eleven feet taken by reliable men. Such exceptional animals must, I fancy have

always been very rare in South Africa, for although in the earlier years of my hunting career I saw a large number of full-grown bull elephants in the aggregate, I never remember to have seen any one which towered above its fellows. My conclusion, therefore, is that although giants of the race undoubtedly occur, they are very exceptional, and that, speaking generally, the vertical standing height at the shoulder of the male elephant in South Africa may be taken to be from ten feet to ten feet six inches.

The size of the tusks in the African elephant varies very greatly, and is no criterion as to the stature of the animal. In the southern part of that continent a full-grown bull will seldom carry tusks weighing less than thirty pounds apiece, whilst tusks of over sixty pounds weight have, in my experience, always been exceptional. Thus, amongst considerably more than one hundred bull elephants which were shot in 1873 in the country between Matabeleland and the Zambesi River, there were only two animals whose tusks weighed over eighty pounds each, and not more than fifteen which weighed over sixty pounds.

In portions of Central and Eastern Africa I believe that the average size and weight of elephant tusks is greater than in the countries to the south of the Zambesi River. The largest tusk known is in the possession of Sir Edmund Loder. It was brought from Central Africa to Zanzibar, and is nine feet five inches long and twenty-two and a half inches in circumference at the thickest part, weighing 184 pounds now that it is thoroughly dried out, so that when freshly taken from the skull of the grand beast which carried it, it must have weighed over 200 pounds.

The largest tusk I have ever heard of in Southern Africa was bought by a Boer hunter, named Bernhard Bauer, from the natives near Lake N'gami, in 1873, I think. It was weighed in the presence of many people at the store of Messrs. Francis and Clark, traders in old Soshong, the former capital of Khama's country, and turned the scale at 174 pounds. What became of this remarkable tusk I have never heard. An elephant carrying a magnificent pair of tusks was killed in Matabeleland within seventy miles of the present township of Bulawayo, three or four years before my first visit to the country. Late one evening a young Boer hunter, named Potgieter, came across some elephant bulls in the thick bush between the Vungo and Gwelo rivers. Amongst them was an animal with tusks which protruded many feet from its head, and seemed almost to touch the ground. This elephant was severely wounded by young Potgieter, but, thanks to the thickness of the bush and the fast gathering darkness, it made its escape for the time being, only to die, however, shortly afterwards. The carcase was ultimately found by a native hunter, named Zwartboy, by whom the tusks were sold to a trader in Bulawayo. They were a very perfect pair, measuring over nine feet in length, and weighing upwards of 150 pounds each. Another very similar pair were bought from Umzila, the King of the Gaza Zulus, by Mr. Reuben Benningfield in 1874. This pair I saw myself in Durban in March, 1875. They were nearly nine feet in length measured over the curve, were a perfect pair, and together weighed just over 300 pounds. The late Mr. William Cotton Oswell also shot an elephant on the Botletli River about the year 1845 with tusks weighing between 230 and 240 pounds the pair—probably the largest pair of tusks, the original owner of which has ever been really shot by an Englishman, though larger have been obtained in barter from the natives. Personally I have been very unlucky in coming across elephants with abnormally large tusks, the largest pair I ever secured of my own shooting only weighing 166 pounds the pair, and I never saw larger tusks in the head of a living elephant.

In Africa, as is well known, female elephants as a rule carry tusks as well as the males. Ten to twelve pounds is the average weight of the tusk of a full grown elephant cow, and although a weight of fifteen or sixteen pounds is not uncommon, anything over twenty pounds is exceptionally fine. I once saw the tusks of a cow elephant shot in Matabeleland, one of which weighed thirty-nine pounds, and the other nearly as much. One of these tusks showed signs of having lain on the ground for a considerable time, as in one part the enamel was much dried and cracked, proving that the animal which once bore them had been found dead, having probably escaped from her pursuers when first wounded, only to die subsequently from her injuries. These abnormal cow tusks were about six feet in length, nearly straight, and almost solid, the hollows at their bases being singularly small. No one with any knowledge of elephant tusks could possibly have mistaken them for those of a male. Speaking generally, I should think that on the average the tusks of a full-grown African bull elephant weigh about four times as much as those of a full-grown cow, and I look upon a cow tusk weighing thirty-nine pounds as being as great a rarity as the largest bull tusk now in existence.

Amongst African elephants, tuskless animals of either sex are rare, though much more so amongst the bulls than the cows. Indeed, I only remember to have seen one bull elephant without tusks, though in every herd one or more tuskless cows are to be met with. I have seen and shot both bulls and cows with only one tusk, and in such cases have found the bone on the other side quite solid, and without any kind of rudimentary hollow where the missing tusk ought to have been set.

At the present day in South Africa, the elephant has ceased to exist in many parts of the country where it was once plentiful. In the Cape Colony it would in all probability have long since become extinct, had it not been strictly protected for many years by the Government. Thanks to this protection, wild elephants still roam the forests of the Knysma and the waste lands of the Addo bush in considerable and ever-increasing numbers, but save for these small remnants of a mighty host, not another individual of their race is to be found for many a hundred miles to the north and north-west.

In the interior of Eastern South Africa, however, elephants are not quite such a thing of the past, and from the eastern borders of the Transvaal to the Zambesi, they may still be found in districts where the country is uninhabited or very thinly peopled, and where at the same time the surroundings are suitable to their requirements. Through all the enormous expanse of low-lying forest-clad country, also, which lies between the habitable parts of Rhodesia and the Zambesi, to the east of the Victoria Falls, elephants still roam; but so cautious have these animals become, and so vast is the territory over which they perpetually wander, that they are very difficult to find.

Three things have saved the wild, unprotected elephant in Southern Africa from extinction. These are the extraordinary development of its sense of smell, its power of walking enormous distances without rest, and the vast extent of the country over which it can travel after having been disturbed. I can illustrate all three points.

Many years ago—in 1872—I was hunting elephants in company with an experienced Hottentot hunter in the forest country to the north of Matabeleland. One day we were ascending a small isolated hill in order to get a view over the surrounding country, when my companion espied a herd of elephants, and at once directed my attention to them. They were advancing rapidly through the forest in a long straggling line, and were heading in a direction that would have taken them across the line of march by which we had come to the hill. As soon as the old hunter at my side realised this fact, which he did at a glance, he said to me, "We must descend the hill at once and cut off the elephants before they reach our spoor, or they will assuredly scent it and take alarm." We therefore scrambled down the hill and ran back through the open forest as quickly as possible in the direction from which we had come. We were in time to intercept the elephants just as the foremost, an old cow, reached the line along which our feet had come in contact with the earth. I saw her stop dead

and scent the ground rapidly with her outstretched trunk, the point of which was moved quickly to and fro close to the ground. That brief examination was sufficient, her delicate sense of smell having evidently conveyed to her brain the information that human beings, the dreaded enemies of her race, had lately passed that way, and might therefore still be near her. How she conveyed the information to her companions I do not know, but in another moment the whole herd had swung round, and were making off at a shambling trot in the opposite direction. Then followed a long and exhausting chase in the intense heat of an African sun, which, however, resulted in the death of several elephants.

On another occasion I remember following four enormous bulls which had come to drink one night in a lagoon formed by the overflow of the river Chobi. We took up the tracks at the first dawn of day, the elephants being not far ahead of us, and were in momentary expectation of coming up with them, when we suddenly found that they had become alarmed and had fled. An examination of the ground showed us that they had turned short round on reaching the track we had made when approaching the river on the previous day with a long retinue of Kaffirs. Their keenness of scent had at once enabled them to detect the taint left on the ground by human feet which had passed that way some twenty hours before, and, as we never caught them up, was the means of saving them for that day at least from the attentions of an elephant gun.

In the year 1885, some five years before the occupation of Mashunaland by Mr. Rhodes's pioneers, I was camped on the banks of the Umfuli river in company with a well-known Boer hunter, Cornelis van Rooyen. We had returned to camp after a good day's buffalo hunting, when two of the Kaffirs we had left at the carcase of one of the buffaloes reported that a herd of elephants had passed through the bush within sight of them, just as it was growing dusk. As the wind was favourable, they did not think the keen-scented animals had become aware of their presence, or taken alarm in any way, so we determined to follow them up the following day.

The next morning, therefore, at earliest dawn, we rode out and cut their spoor some two miles beyond the spot where the Kaffirs had seen them the preceding evening, and a glance at the tracks showed us that they had still been walking quietly here, and had evidently not scented any of the dead buffaloes. The elephants had a long start of about ten hours in front of us; but as they had been feeding to some extent, stripping a tree here and there of its bark, sometimes breaking off large branches, and even stopping now and then to dig up some succulent root, it looked as if they were altogether unsuspicious of danger, and might therefore be expected to halt as soon as the sun became uncomfortably warm, in order to enjoy a midday siesta in a shady spot, as lazy, sober-minded elephants always do in parts of the country where they have not been much hunted. There was, amongst the great round and oblong tracks of some twenty large elephants, the spoor of a tiny calf that could not have been many days old, and the fact that so young an animal was amongst the herd made us feel sure that we should come up with them in the course of the day; for we did not think such a baby elephant would be capable of travelling any very great distance without resting. We soon learned too, by a careful examination of the ground, that two bulls were with the herd, the one evidently an animal of the largest size, whilst the second was considerably smaller, but yet might be expected to carry tusks of about 20 to 25 lbs. weight each. The big bull, we feared, would prove to be a tuskless elephant, which both Van Rooyen and myself had lately seen in this district, the animal I have before mentioned as the only tuskless bull elephant I have ever seen.

We had ridden out from camp accompanied by some half dozen Kaffirs and a Masarwa Bushman. The former were Matabele and Mashunas, and were very much like any other ordinary specimens of their race, but the latter was one of the most sagacious hunters I have ever met even amongst men of his own wild race, and, although considerably past the prime of life, he was simply unsurpassable as a tracker and runner. It was, I should say, about 5.30 A.M. when old Marman the Bushman took up the spoor, and we stuck to it at a very fast walk till about 3 P.M., only twice taking the saddles off the horses for a few minutes at a time to ease their backs and allow them to stale.

By this time all the Kaffirs were very much fagged, as the heat of the sun had been intense for the last five hours, and when we saddled up our horses for the third time and old Marman announced his intention of running on the spoor, we told them to take a rest and follow quietly on the tracks of our horses. Old Marman now commenced to run, and in all my life I have never seen a more marvellous feat of endurance. He would run a mile at a good sharp trot, then walk very fast for a quarter or half a mile, then run again; and so he kept on for mile after mile and hour after hour. At length the burning sun sank from view, but still the elephants were far ahead of us, and still old Marman trotted doggedly on their tracks.

Soon after this time we came to where the elephants had rested during the fiercest heat of the day, possibly from two till four, and as on again moving they had scattered and commenced to feed in real earnest, breaking down trees and digging up roots in all directions, we might

yet have come up with them had we been in a part of the world where the twilight is long drawn out. But within the tropics, some 20 degrees south of the equator, once the sun has set, night comes on apace. Nor could old Marman run without a check on the tracks of a herd of elephants that had now scattered about, thinking of nothing but appeasing their hunger, in the same way as he had done before when they kept travelling straight ahead, only breaking off branches occasionally and chewing them as they marched along. Darkness, therefore, soon forced us to abandon the pursuit till the following morning.

During the thirteen hours we had been on the elephants' tracks, I think we could not have covered less than fifty miles, as old Marman must have run nearly, if not quite, twenty after three o'clock, and allowing over an hour for the time lost while the horses were offsaddled, we had then already done about eight hours' very fast walking since first taking up the spoor in the early morning. The elephants had had twenty-four hours in which to accomplish this distance, but as they apparently had no particular cause for so long a journey, and were moreover accompanied by a very young calf, it would appear as if this were only their normal rate of travel during the twenty-four hours.

Even in districts where elephants have been but little molested, their tracks will often have to be followed for many hours before they can be overtaken, and where they have been constantly persecuted for many years, as is the case all over Matabeleland, and Mashunaland, they never seem to rest for more than a short time during the hottest portion of the day, but keep constantly moving forward, feeding as they walk. They do not confine themselves to any particular district, but roam over the whole of the enormous areas of uninhabited wilderness of which they were once the undisputed masters, but in which they are now never safe from the attacks of ivory hunters.

To return to the narrative of our pursuit, when it became so dark that we could no longer follow their tracks, we decided to pass the night at the nearest stream, and then take up the spoor again in the morning. Luckily, in this part of the country water was very plentiful, as we were in the midst of the many small streams which, rising on the northern face of Intaba Insimbi (the Hill of Iron), run down into the Umzweswe river. We soon reached one of these, a little rill of beautifully clear water, flowing down an open glade, carpeted with a short, succulent, red-seeded grass, which, springing up at the hottest time of year, affords excellent pasturage for horses and cattle, and which I have never seen anywhere else, but in the upland valleys of Rhodesia. As our horses had had no food at all during the day, we hobbled them and turned them loose, having first collected a large quantity of dry wood and kindled two large fires, one on each side of the little glade. This we did in order to scare away lions, and then, allowing the old Bushman to get a little well-earned sleep, Van Rooyen and I kept up the fires, and from time to time turned the horses whenever they strayed into the darkness. We had eaten nothing since the previous evening, nor had we brought any food with us : but to go a day without food and pass the night without a blanket is not looked upon as any very great hardship by an elephant hunter, and we should have felt quite happy had we been sure of overtaking our game on the morrow. Neither of us, I think, expected to do so, as the calf, on whose weakness we had reckoned to delay his seniors, was evidently a very strong little animal, and moreover, when day dawned, the elephants would again have had the whole night during which to increase their lead. However, we determined to follow them for another day and trust to fortune.

About midnight we tied the horses to a tree close behind one of our fires, and then lying down with our backs to the blaze, got what rest we could before daylight. As soon as we could see we saddled up, and once more took up the spoor of the elephants, which old Marman followed at a more sober pace than on the preceding evening, though he still got over the ground at a good sharp walk. For mile after mile we stuck to it, and with every mile the chance of ever overtaking them seemed to grow smaller. We had twice offsaddled the horses and were thinking of doing so for the third time. The cool of early dawn had gradually given place to a temperature which, culminating when the sun was at its zenith, seemed at length about to become more bearable, as the glowing orb was now dipping towards the west. And yet the elephants seemed further away from us than ever. Their dung, and the leaves of the branches which had been broken off and lay scattered on their track, were getting drier and drier, and I do not believe that at three in the afternoon of this second day of the pursuit we had yet reached the spot where they had passed at daybreak.

Suddenly old Marman stopped as we came to some tracks crossing the spoor we were following at right angles. After a quick, eager examination he said in the Matabele language, "Their familiar spirits (amaglosi) have deserted them," and then told us that the animals we were following were not far in front of us, as they had recrossed their own tracks but a short time ago. We soon satisfied ourselves that it was the same troop of elephants by noting that the footprints of the little calf and the big bull were amongst the fresh tracks.

Shortly after this we came up with the animals themselves in some very thick bush, and shot the two bulls, the biggest proving to be a tusker

with teeth weighing slightly over 40 lbs. each, while the tusks of the smaller bull did not weigh quite 40 lbs. the pair. The Kaffirs we had left behind the previous day turned up, contrary to our expectation, before dark, and that night, after a forty-eight hours' fast, we all had a glorious meal of elephant's heart and trunk. The next day we chopped out the tusks and reached our camp on the Umfuli on the evening of the fourth day after we had left it. We should, however, never have overtaken these elephants had they not made a turn and recrossed their own spoor, unfortunately for them, just in front of us, for I believe that they had travelled just as far during the last day and night as they had done in the course of the previous twenty-four hours, and judging from my own experience on the foregoing and many other occasions, I am of opinion that when elephants have been much persecuted they travel continually during the whole year at the rate of from twenty to fifty miles every twenty-four hours.

The South African elephant, unlike any other animal with which I am acquainted, never, or at any rate very rarely, lies down to rest, though he will roll in mud or rub himself against the side of an ant-heap.[1] I make this statement advisedly, as I have seen altogether some thousands of elephants sleeping, but all have been standing, nor have I ever seen even the impression on the ground where one has been reposing. At night elephants travel and feed, taking their rest during the hottest hours of the day, at which time they stand in the shade of large trees, or in the recesses of the wait-a-bit thorn jungles for which they have such a strong predilection.

In proof of the assertion I have made that in South Africa elephants wander over enormous tracts of country, I will adduce the fact that in 1878 some friends of mine cut a bullet out of an elephant killed in Eastern Mashunaland that had been fired into it the year before, a long way to the west of the Gwai river. There was no mistaking the bullet, as it had retained its shape and the marks of the grooving perfectly, and could only have been fired out of a certain 12-bore Westley Richards rifle used the year before in the thorn jungles of the Linquasi district by an English hunter—Mr. Spencer Drake. The distance as the crow flies between the spot where this elephant was wounded in 1877 and where it was killed in 1878 is approximately some 250 miles.

I have seen it stated that in Africa full grown bull elephants are never found in company with cows, and as Dr. Livingstone has said that a picture representing bull and cow elephants mixed would at once stamp the artist who painted it as unfamiliar with the habits of the animals he depicted, the mixing of the sexes must be unusual, as the good doctor was a very careful observer, and few men have had better opportunities of observing the African elephant in its wild state. Nevertheless I have seen a good many exceptions to this rule, but such changes of habit may have been caused to a considerable extent by constant persecution, which would result in the breaking up of the small troops of bulls, until possibly single animals were left wandering alone, which were ready to consort with any others of their kind they happened to meet. On more than one occasion I have seen a small herd of bull elephants standing sleeping close to a large number of cows, but in such cases the bulls were all together and not mixed with the females.

In South Africa, before the natives became possessed of firearms, the elephant was killed in various ways. Sometimes he was caught in a pitfall, though probably few but young and half-grown animals were the victims, and sometimes his death was compassed with heavy assegais, which were driven deep down between his shoulder blades by a savage seated in a tree waiting on his line of march. These long, broad-bladed assegais were fixed into heavy shafts, the weight of which worked them gradually into the vitals of the wounded animal.

In the country lying between Matabeleland and the Zambesi, even in my time, elephants were first hamstrung whilst standing asleep, by a blow from a thin, sharp, broad-bladed axe, which severed the "tendo Achillis," and then done to death with assegais. If the "tendo Achillis" was cut through, the poor brute was at the mercy of his assailants, being almost unable to move, but if the blow failed or was only partially successful, he was able to make good his escape, and in 1872 and 1873 I shot several elephants that had been wounded by blows dealt with axes in the endeavour to sever the "tendo Achillis," and in some cases found the wounds still unhealed and sloughing.

By Europeans elephants are, or rather have been, hunted (for I think there are now no professional elephant hunters left south of the Zambesi) both on foot and horseback. There is a considerable element of danger in either form of the sport, as, although elephants are in one way the most timid of animals, and will not allow a human being to approach them if they can possibly get out of his way, yet when interfered with, and when they discover that escape is hopeless, they are liable to become excessively vicious. Personally I rank the elephant as a more vicious animal than the buffalo; that is to say, taking an average of the considerable number of both animals I have shot, I have been charged by a larger proportion of elephants than of buffaloes.

As I have said, elephant hunting as a business has now become a thing of the past in South Africa, for the game is no longer worth the candle.

[1] In the interior of South Africa ant-heaps are sometimes twenty feet in height.

In the years 1872, 1873 and 1874, however, although I had to do an immense amount of hard work, I found it easy enough to pay all my expenses by elephant hunting in the country to the north and north-west of Matabeleland. During that period I hunted entirely on foot, using the commonest of old muzzle-loading trade guns, and cheap powder that was sold to the natives in 5lb. bags. My bag for the three years was seventy-eight elephants, but I cannot help thinking that had I then possessed a good breech-loading rifle I might have killed at least double that number.

Like every one else who has shot many elephants on foot, I have had some narrow escapes, and have owed my life many times to the fact that the African elephant can almost invariably be stopped in full charge by a shot in any part of the head or chest, even though the wound inflicted may not be mortal. When an African elephant charges he raises his head and spreads his enormous ears like two sails. When he first rushes out he often raises his trunk high in the air, trumpeting loudly the while. But such a demonstration is, I think, usually only meant to frighten his enemies, and he is not likely to come far with his trunk upraised before turning round and rejoining the herd. But when an elephant really means to charge home, he comes on (usually, at any rate) with his trunk held down between his tusks, and the point curled in towards his chest, keeping up a succession of short, sharp screams of rage all the time. It is useless then to try to kill him with a shot in the front of the head, as the angle at which his head is held makes it impossible for a bullet fired from the shoulder of the man he is charging, who is standing perhaps some twenty yards in front of him, to reach his brain (which lies low down in the back of the skull), without first passing through some 2ft. of trunk and a great deal of bone. The best shot under such circumstances is right through the trunk into the chest, as a powerful rifle or smooth bore gun will drive a bullet right through an elephant's trunk and then reach his heart. I have killed several in this way, and have hit many others in the head, trunk or chest on the side of the trunk when they were charging, but without exception every one, as soon as he was struck, immediately stopped screaming, and swerved off to one side. Once I remember I was charged by an elephant bull which I had wounded with a ·450 bore Metford rifle by Gibbs, of Bristol. As he came on, I wondered whether the small bore bullet would stop him, as it would have been all up with me had it not done so. He was screaming loudly, but immediately the little bullet struck him in the chest he swerved off, and became silent, and I killed him with another shot.

Elephant-hunting on horseback is very much pleasanter and infinitely less fatiguing than the same pursuit on foot, and, given a thoroughly trained horse and fairly open country to hunt in, there ought not to be much danger in the sport. But one cannot always have things one's own way, and, as a matter of fact, when you do come up with elephants, your horse will usually be pretty tired, and your game will be encountered very probably in dense thorny jungle, through which a charging elephant can crash in an almost straight line, whilst a horse has to pick his way amongst the trees and bushes. Under such circumstances a horse, which in open ground, and when fairly fresh, could give an elephant forty yards out of a hundred and then beat him, may very easily be caught by his bulky pursuer; and many cases have come within my own knowledge where horses and their riders have been overtaken by elephants, sometimes with fatal results. I myself once had a marvellous escape, as my tired horse was run into and thrown down by a wounded cow elephant, from under whose body I extricated myself, unhurt indeed, but covered with blood that was streaming from a wound in her chest.

I will now conclude this article with a few words as to the merits of various forms of rifles for elephant-shooting. Probably ninety per cent. of the enormous number of elephants which are now annually killed in Africa for the sake of their ivory are shot by the natives with 12-bore muzzle-loading muskets. Therefore a 12-bore rifle is quite capable of killing an elephant, and many indeed have been killed with rifles of a very much smaller bore than this. Indeed, I have killed ten elephants myself with a ·450-bore rifle by Gibbs, of Bristol.

However, although elephants can be killed with small-bore rifles pretty easily if picked shots can be taken, such rifles would not, in my opinion, be the best that could be used by a professional elephant hunter in dense bush, where a good view of the animal is not always or even often obtainable. A very good weapon to use under such conditions would, I think, be a double eight-bore for body shots, whilst the small-bore would often be found very useful for brain shots, if solid bullets were substituted for the hollow-pointed projectiles usually employed to kill antelope and all other soft-skinned animals.

Were I a young man to-day, and were I about to proceed to Central Africa with a view to making a living by elephant hunting, I would take with me two of Holland and Holland's double eight-bore paradox guns and a small-bore rifle; but were I going to Central Africa thinking that I might possibly get the chance of killing an elephant, but not for the special purpose of hunting elephants, I would not cumber myself with any heavy rifles at all, but trust to the chance of killing one or two of these animals by shots in the brain from a small-bore rifle, for I consider it most unprofitable to go to the trouble and expense of carrying heavy arms and

heavier ammunition through the interior of Africa, unless such weapons are likely to be used frequently.

F. C. Selous.

Since writing the above my belief in the capability of small-bore rifles to kill such ponderous animals as African elephants has been much strengthened by a letter lately published in the *Field* newspaper by Mr. A. H. Neumann, who is a thoroughly practical hunter, and has had a wide experience of big game shooting in various portions of Southern and Eastern Africa.

Writing under date Jan. 2nd, Mr. Neumann says regarding elephant shooting: "I cannot say the exact number of elephants I have shot with the ·303 rifle, as during the first part of my trip I was using a 10-bore as well, but I killed a good many with it (chiefly body shots); and since I had the bad luck to get hurt by one, I have not dared to fire any other rifle for fear of the recoil, and then I killed five of my biggest bulls, none of which were shot in the brain. I have killed several elephants with a single bullet through the heart; and though, with such a tiny puncture, a big bull takes often (though not always) a little longer to die than from a large wound, I have never had to follow one far that had received a good shot. I always use the military cartridge with solid nickel-covered bullet."

F. C. S.

ELEPHANTS IN THE ADDO BUSH —Not far from Port Elizabeth, in the Eastern Province of the Cape Colony, is the small station of Addo, situated on the outskirts of the bush, in which elephants have thrived for many years. There are probably about one hundred elephants left, sometimes to be found in one troop, but more often split up in two or three smaller troops; they wander about from end to end, apparently never leaving the bush, except to visit the adjoining farms, where they break up fences, and otherwise do a vast amount of damage.

The bush is extremely thick, and in places almost impassable, except by following the elephant paths; there are no big trees, all being of about the same height as an elephant, thus affording him excellent cover, and food within easy reach.

Though there is a small river at the end of the bush, the elephants more often water at the few small vleis or water-holes, which are dotted here and there; at one or other of these vleis fresh spoor will often be found, and then the hard work commences. Should it be last night's spoor, it will often be necessary to follow as much as twelve or even twenty miles through thick scrub before coming up with the troop. It is well to have a "boy" who thoroughly knows the bush, as he will often save many miles of weary walking; platelayers, also, and other workmen can often give information as to where the troop has lately been seen. Elephants sometimes trek great distances through the night, but, unless disturbed, only sleep and feed, moving slowly through the day. Very few seem to lie down, and the greater number of the troop sleep standing. This is perhaps advantageous to the hunter, as it affords a better opportunity of marking them down. It is most important to know roughly the relative positions of most of the elephants in a troop, for, should you walk into the middle of them, it is certain that some will wind you before you see them, and you will have little or no chance of a shot that day. Again, it is safer when shooting to choose an animal near the the outside, for I have constantly seen, on the report of a rifle, the whole troop rush round and round in a circle, congregate, and then make off in a straight line, carrying everything before them. There would be little chance for the sportsman who was in the centre of that circle.

By climbing up trees, and patiently watching, you may gradually work your way towards the outsiders, keeping down wind; they are very difficult to see, owing to the nature of the bush, but generally the flap of an ear in the sunlight, or some other movement, will discover their position. Having settled on your animal, it is, as a rule, simple to get up to the very bush behind which he is sleeping or feeding; once there, you should seize the first opportunity offered, and shoot quickly. Should he make off, in two or three strides he is hidden from view, and it is unlikely you will get another chance that day.

A little before midday is the best time to come up with them, as they are mostly sleeping then and easily approached; but towards evening it is more difficult, and they are beginning to get on the move.

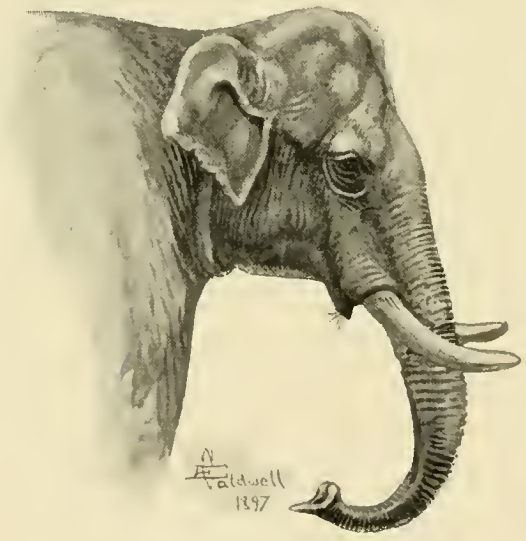
During the day they are timid and will generally try to escape, though there are a few cases on record of men having been killed by elephants in the Addo Bush. In one of these cases, two brothers (Dutchmen) were followed by their dog, who ran forward and worried the elephants until they at last turned and chased him straight back to his masters, who, as a last resource, got up trees a little distance apart; one of them sat there, and saw his brother dragged down and trampled to death.

At night they are supposed to be "Kings of the Forest," and people say that after sunset they will more often charge than not. I remember one evening coming up with a troop just at sundown, after having had a long and disappointing day. We determined to try and get a shot while there was yet light, and in our hurry walked straight up to a tree, behind which one was standing. In a moment bang went the rifle on my right, for its owner had seen the head round the corner of the bush;

almost simultaneously the other rifle rang out, and I then saw the elephant in the centre of the bush making straight for us. There was no time for careful aim, nor could I see her distinctly enough, so I fired at her point blank, and dived through a "wait a bit" thorn bush, which stripped me of most of my clothing. She fell on the spot where we had been standing, but was up in a moment, and chased us for about half a mile, every now and again getting our wind and pressing us hard; it was too dark to try and tackle her again, and by this time the whole place was alive with the remainder of the troop. We were no doubt turned out of the bush that night, but then she was a cow elephant with her calf; and I think, had it been a bull, in all probability he would not have charged.

G. D. WHEELER.

ELEPHANT, INDIAN (*Elephas indicus*)—Elephant shooting in India is now practically a thing of the past. Forty years ago, in the southern part of the Peninsula, and especially



HEAD OF INDIAN ELEPHANT.
Av. height at shoulder, 9 ft. 9 in. Av. length of tusk, 6 ft.; Max. length of tusk, 8 ft.

along the Western Ghats in the Wynaad, Malabar, Coimbatore, Madura, and Tinnevelly districts, wild elephants were so numerous and so troublesome to ryots and planters that the Government used to offer a reward for their destruction. In those days it was, therefore, not considered unsportsmanlike, as it would be now, to kill a female—although, of course, the male was more sought after by Europeans, for the sake of the trophy which his tusks afforded. Native shikaris, as well as many Europeans, who were glad of the Government reward to help to pay their shooting expenses, killed females as well as males, and the wild elephant was driven back into the more remote parts of the forests, and no longer molested the cultivator. The Government then ceased to offer the reward, and afterwards passed an order forbidding their destruction, and formed establishments for their capture alive. Now no one is allowed to shoot elephants without a special permit. This must be obtained direct from the Government, and is, as a general rule, restricted to one tusker or to a well-known rogue which has been attacking men.

It is a strange fact that whereas, in Ceylon, tuskers are exceedingly rare—the males, as a rule, being "Makhnas" carrying short stumps only—every herd in India, just across the narrow straits of Manaar, has one or more tuskers in it. There are also numbers of solitary males, but "Makhnas" are very uncommon.

In the northern part of British Burma, where elephants are numerous, I believe that no very hard and fast rule has been made against shooting them, and that permission to do so is readily obtained from the local civil authorities, and in the Native States of Travancore, Cochin, and Mysore permission to shoot a tusker may be obtained from the Maharajahs, through the influence of the British Resident.

Before attempting to shoot an elephant, it is wise to make a careful study of the head of a tame one in order to understand how a vital shot may be placed in the brain. It is well also to study a skull in a museum.

The head of the Asiatic elephant differs considerably in formation from that of the African; so, of course, it is the head of the former which must be studied. To kill him stone-dead with one ball the brain must be reached. It lies far back in the head, exactly between the orifices of the ears.

Supposing that a rod be passed in at one ear and out of the other, it would go right through the brain. It should be borne in mind that in order to kill the animal your ball must cut the middle of this imaginary rod. How to do this from various angles is the thing to be studied. I will endeavour to describe it.

(1) If the animal be directly facing you, with both eyes visible, and standing on the same level as yourself, or a little above you, plant your ball low in the rounded bump which is so conspicuous on an elephant's forehead just above the trunk. At that spot there is a convenient opening in the skull through which the bullet will pass, slightly upwards, direct to the brain.

(2) If he be facing you, with both eyes visible, but standing on a lower level than yourself, plant your ball in the concavity of the forehead just above the rounded bump, and it will crash through the crenelated bone, of which an elephant's head is composed, and will reach the brain.

(3) If the animal be standing at three-quarter face towards you, with only one eye visible, shoot into the hollow of the temple in a line between the eye and the orifice of the ear at such an

angle that the bullet may cut the middle of the imaginary rod passed through the ears.

(4) If he be standing exactly broadside on to you, shoot straight into the orifice of the ear.

(5) If he be standing with his head three-quarters turned away from you, and if you can still see one eye, shoot behind the ear, when he flaps it forward, at the level of the orifice. The ball will go forward into the brain. If his head be so much turned away from you that you cannot see his eye, do not fire, because if you do fire behind the ear the ball will go too much forward and miss the brain.

(6) Get as close as you possibly can; a golden rule. At twenty yards, or less, you are sure of hitting the exact spot at which you aim, and, moreover, at such close quarters the report, flash, and heavy blow inflicted will confuse the elephant so much that you are really safer than you would be at a greater distance. In case of failure to kill, he is nearly sure to turn tail.

It is unwise for a novice to approach elephants in high grass or in thick treeless jungle. A good tree handy, behind which you can dodge in case of a charge, is a wonderful steadier for the nerves. An elephant can be killed by shooting him behind the shoulder, and this is usually done in Africa, where they are found more in the open, and can be followed, fired at more than once, and kept in sight; but as an elephant hardly ever falls unless shot in the head, he may run for miles without stopping. In the dense jungle, in which they are usually found in India, you can seldom get more than one shot, and it is very difficult to track a wounded one, as his trail will probably cross and recross those of others and be lost. The shoulder shot should therefore never be tried. I have heard of its being attempted often, but I know of only one instance of the elephant falling dead.

I have great faith in the smooth bore gun and the spherical bullet for elephant shooting—an explosive or expanding ball is unsuitable; a round one gives a heavy blow and, if hardened, has great penetration. It is, I think, not so liable as a conical one to be diverted from its course in going through the eighteen inches of thick skin, flesh, and bone which it must traverse on its way to the brain. I have shot elephants dead, with one round ball, out of all sized guns from eight to sixteen bore. I would recommend Nos. 10 or 12. The gun should be strong in the breech, capable of carrying a good heavy charge of powder. The ball must be hardened. The best amalgam I know is one-third of block tin to two-thirds of lead, both by weight. The proper sort of tin can be procured in any Indian bazaar; in Tamul it is called *tŭtŭnāgŭm*; in Hindustani *rūpjās*. In casting these bullets, the tin should be put into the ladle first, as it melts at a lower temperature than lead: the latter can then be added, and when all is melted it should be stirred with an iron rod before it is poured into the mould. The ball is very nearly as heavy as a leaden one, and is exceedingly hard. I once shot a bull bison with a ball, thus hardened, out of a No. 10 two-grooved rifle; it went through both shoulder blades, and seeing it sticking just under the skin on the other side I cut it out and, finding it perfectly good, reloaded my right barrel with it. Shortly afterwards I walked unexpectedly up to within twenty yards of a sleeping tiger, and shot him through the head as he awoke and snarled at me. In skinning him I again found the ball at the back of his ear. It had gone right through the hard skull, but it was so little damaged that I could have used it again.

The season for forest shooting in Southern India is during the rains—*i.e.*, between July and December. The ground is then soft and moist, with no dry leaves lying about, so that one moves noiselessly through the jungle, and tracking is easier than when the ground is hard. The sportsman must be prepared to face a good deal of wet, but every now and then he will enjoy a week or ten days of a so-called "break in the monsoon," and then the southern forests are a very paradise—a pleasant, cool climate, beautiful, luxuriant vegetation, and plenty of shade.

At that time of year the forests are considered healthy, but just at the beginning of the rains, as well as just after they have ceased, there is great risk of malarious fever; miasma hardly exists as long as the ground remains thoroughly saturated.

After the monsoons are over, and the jungles are thoroughly dry, very heavy dews fall at night, sufficient to bring malaria out again, and accordingly the southern jungles should be then avoided. I believe it is just the reverse in the northern parts of India. The hot weather is safe and the rainy season unhealthy. At high elevations—5000 to 7000 feet, such as the Nilghiris, Palnis, Annamallies, and the Travancore hills—there is no malarious fever.

It is needless to say that dark clothes should be worn. "Khaki" or mud colour is the best. They should be of strong cotton material which will not tear readily in thorny or bamboo jungle. Jail cloth or workhouse sheeting, dyed brown, is the sort of thing, and very thin woollen vests and drawers can be worn underneath.

One very necessary article of clothing for the southern jungles needs description, namely, the "leech gaiter." Small and very voracious leeches abound in some places, which attack the legs and ankles. Their bite is not only irritable and unpleasant, but it is also very apt to fester. They will get through anything woollen, so the gaiter must be made of close cotton or linen material, shaped just like a fishing stocking, to be worn over the sock and inside the boot or shoe, with a running string to tie tight beneath

the knee. Above that, leeches are easily seen and can be brushed off. Several pairs of these gaiters should be taken, as they fray or tear, and a leech will find his way through the smallest hole.

A light waterproof cape is necessary. Gun-covers should be very loose, because the guns must be nearly always carried in them during the rains, and I know of nothing so irritating as tugging frantically at a tight cover while a bull bison or a deer is standing gazing at you within shot, and the camp in want of meat.

A very portable kit is required for a trip into any of the remote forests where elephants, bison, &c., may be found. Everything must be carried on men's heads or backs; so, if a tent be taken, it must be of the lightest description—one or two squares of waterproof sheeting will be a great comfort, and a good *tente d'abri* can be made with them on emergency. Cooking utensils and food of all sorts must be taken, and as provisions for all the carriers and servants must be provided, the train of followers soon swells. It is very necessary to make definite arrangements before starting, through the district authorities, for supplies of rice, bread, fowls, curry stuffs, salt, &c., to be sent to the camp from the nearest villages. The jungle people are clever at building grass or bamboo huts. They are generally good trackers and indefatigable walkers, but they will seldom carry loads, and they require to be well fed and supplied with such luxuries as tobacco, betel nut, salt, &c., and although they have to be paid for their services in money, they expect and appreciate presents of cloths, beads, knives, &c., as a reward for successful shoots.

It is needless to say that these wild men must be kindly treated. Native servants are very apt to be rough and overbearing with them, and this should be carefully watched and deprecated—a blow from a servant may cause every one of the hill men to desert the camp with or without excuse.

Having arrived at your destination in the forest, and settled down in your camp, you may, possibly, get information from some of the neighbouring people that elephants have been seen or heard. They may then soon be found, but if not, you must confide yourself to a man who knows the forest well, and go out in search of a track. When one is found, which is judged to be only a few hours old, it should be steadily followed until you hear or see the elephants. This following up of a track is interesting and exciting, and by no means so easy as may be supposed, as in an elephant-frequented jungle old and new tracks cross and recross each other; and after rain it requires experience to keep to the fresh one. The sound of breaking branches or bamboos, and other signs, will generally give you timely notice when you are getting near, and then care must be taken to approach up wind. Elephants are accustomed to the noise of other animals moving in the forest, and are not very keen sighted, but their sense of smell is acute. If you have the wind, you may approach pretty close without fear of disturbing them, and if you are dealing with a herd, you may stand for any time behind a tree or bush, within fifty yards, and look them over in order to make out where the tusker is. When you have discovered him, if there be females or young ones between you and him, you must wait for your opportunity of getting within shot. It is not easy, at first, to refrain from firing a long shot on such occasions, but you must be patient if you wish to make sure of your tusker.

With a solitary elephant—and these generally carry the finest tusks—much more care must be taken in approaching. He is always on the alert, and he will stop feeding and listen if he hears a twig break under your foot; if you or your followers then move he will probably catch sight of you; and if he be a "rogue," he will charge—if not, he will hoist his tail and sail away through the jungle, carrying everything before him, and you will be lucky if you ever see him again, although you follow him till dark.

If he should charge, it becomes a mere matter of nerve. An elephant, as a general rule, coils his trunk when he means mischief, and does not lift it in the air. He thus presents you a capital front shot, and if you are cool and let him come near enough—say to within fifteen or twenty yards—the odds are against the elephant. Moreover, as I have already said, even if you do not kill him, the shot and the flash right in his face at such close quarters will generally confuse and turn him.

If an elephant should happen to charge with his trunk up, it covers the vulnerable spot, and the only thing to be done is to fire into his eye and step to one side. More than once I have had an elephant pass me so closely, under such circumstances, that I could have nearly touched him with my gun, but stopping and turning his head a few yards on, he has given me the chance of a shot behind his ear with the second barrel.

I may be pardoned for concluding with an instance of the value of patience and steadiness under exciting circumstances. On one occasion I had got close up to elephants feeding in a thick brake of thorny mimosa, and while listening to their movements and waiting till I could get sight of them, I became aware that some of the herd were coming towards me. I was well concealed behind some bushes when the two leading elephants appeared and I saw that they were both tuskers, one following the other. They walked slowly past me within about twenty yards and I was in the act of pulling trigger at the leading one when it flashed across me that, at the report of my gun, the other would see his friend fall and might turn his tail to me, so I

shifted my aim to him, with exactly the result I anticipated. He fell dead to my right barrel, and the other one, seeing nothing, but hearing the shot, wheeled round and gazed at his prostrate companion. He also at once fell to my second barrel and the two lay dead with their trunks almost touching.

When an elephant is killed, his tusks, or, in the case of females, the pegs or tushes, may be cut out with an axe, a very laborious operation; or if the people around can be depended on, they may be left in the head for a week or so, till decomposition has taken place. They can then easily be drawn out.

The tip of the tail, which is more or less adorned with strong black bristles, like whalebone, may be cut off and dried, and makes a good memento. A capital footstool may be made with a forefoot cut off at the first joint and well cleaned out and dried.

The natives of Southern India do not eat the flesh of the elephant, but the Burmese do so. Once I had two friends coming to my camp to shoot, and being short of meat I had the tail of an old tusker I had killed that day made into soup, and very good soup we thought it, but perhaps that was because we were very hungry!

The rest of an elephant's carcase is absolutely useless.

J. Michael.

ELEPHANT TRAPPING IN INDIA. — Hog-hunting has been reckoned hitherto as the most exciting and dangerous sport in India, but I am not sure that noosing and running down elephants is not more trying to the nerves of the hunter, more fatiguing, and more dangerous.

The best caste female elephants are trained, exclusively for this work, almost as soon as caught, and are carefully fed on grain to give them endurance and wind. Only the fastest are retained as Koonkies, off whose backs the wild ones are noosed, but one or two good tuskers are employed to act as "chuckers-out," if their services are required.

The equipment of a Koonkie when arrayed for a hunt is as follows. A stout rope is passed twice round the body to act as a girth, then under the neck and tail like a breast-plate and crupper, and securely fastened close to the withers for the sling to be attached. The Mahout, who guides the elephant and throws the noose, must be a plucky fellow, specially trained to the work, and of course he must be at home on the beast's bare back. He has an assistant, who has also been trained, and on whom he can depend, and whose business it is to keep the Koonkie at full speed by striking it on a "raw" made on purpose near the root of the tail, and he has also to assist directly the lasso has been thrown and the wild elephant noosed. On falling in with a herd, the Mahout singles out one, generally a good-looking three-parts grown tusker, as they fetch the largest prices when broken, but, if no young male is present, a good female is selected. Occasionally a full grown tusker, or even a makhna is snared, but they give a great deal of trouble to catch, and to rear afterwards, as very many, from their stubborn resistance, get so badly cut by the rope forming the noose, that mortification sets in and destroys them. The large merchants who send out these hunters do not encourage the capture of any but half or three-quarter grown calves, but occasionally, when they obtain a prize, in the shape of a high caste male, they forgive the transgressors; yet, if their time has been wasted in catching useless animals, all the employees are heavily fined. As soon as a herd is sighted, the Mahout on his Koonkie rushes at full speed after the animal selected, and endeavours to separate it from the herd. The plain where the hunt takes place is covered with long grass, with trees scattered here and there, and the inequalities of the surface cannot be seen.

One moment it seems as if the elephant and its riders must go heels over head, the next that they must fall backwards. Whatever the dangers there must be no diminution of speed, and you must take the chances of breaking your own neck or of injuring your elephant. To bring your quarry to a standstill before it can recover its second wind, it must be pressed from the very first, and the superior training and condition of your elephant will enable you to do this in half or three-quarters of an hour, perhaps longer, if you meet an exceptionally fast antagonist. Unless your arms are muscular and well trained, and you hold on with the tenacity of a bull dog, you will soon be thrown off, and will see little or nothing of the chase and its results.

As soon as the wild elephant stops, the Koonkie ranges alongside, and the Mahout, who invariably stands up, holds on to a small rope fastened to the girth for that purpose with his left hand, whilst with his right he launches the lasso. The wild one, feeling the rope dangling about its face, curls up its trunk, and in so doing it assists in its own capture, as the noose then slips under the neck and is drawn tight The Koonkie now plants herself as firmly as possible, leaning her whole weight to the side opposite to its captive, with one foot advanced to meet the struggles of the one ensnared, who, having recovered a little breath and finding itself entangled, rushes off with great violence, dragging the Koonkie after it. But the noose tightens, the animal gets half suffocated, and has to pull up; another Koonkie then rushes along the other side, a second noose is thrown, and the captive is safe. The two assistants then jump off and tether the feet of their prize, which they do in a few minutes, being most expert from long practice. The Mahouts have now the

dangerous task of loosening the slip knots and of fastening thick ropes round the necks of their victims, but all engaged in this sport—men and beasts—are so expert, that few or no accidents occur. Two or three tame elephants now close up and lavish attentions on the half-strangled captive, while the Mahouts attach a small rope to one end of the noose so as to loosen it, which is often a matter of difficulty, for the ropes sometimes cut deep into the flesh and cannot easily be extracted. Directly this has been accomplished, the prisoner is placed between two tame elephants, and marched off to a selected spot, where it is temporarily tethered with other *johnny raws*. Thence it is removed to a permanent camp, where it is broken in, and is generally fit for work under six months.

When a wild elephant is very violent, and proves too strong, the rope of the noose is cut, and it is allowed to go free. Now and then, but very rarely, a Koonkie is overthrown, and her riders killed in these encounters. So many thus caught died that the Government many years ago forbade this mode of hunting, but it is carried on in the remoter localities.

Capturing Elephants in a Keddah.—There are two descriptions of Keddahs in use. One is merely a ditch about nine feet deep, about the same breadth at top, but only a foot broad at bottom. The other a combination. Most Keddahs are constructed in forests where timber is plentiful. A narrow entrance is left, to be enclosed either by a portcullis or *abattis*, which is placed at the entrance after the herd has been driven in.

From this entrance two strong fences are made in a ⟋ shape and carried to a considerable distance. If the herd once gets within this angle, and the beaters act vigorously together, it is not difficult to force the herd within the stockade. Every expedient is adopted to frighten the elephants, and to drive them forward; guns are fired, huge bonfires lighted, tomtoms beaten, cholera horns blown, and amidst the yelling of the beaters, the trumpeting of the bulls, the bellowing of the cows—in which the tame elephants join—an uproar is created sufficient to awaken the dead. Amid this overwhelming din a final exertion is made, the whole or the greater part of the herd is driven headlong into the Keddah, and the entrance is closed, while the wild animals, seeking in vain an exit, and finding themselves entrapped, set to work and create a row, to which that previous was as nothing. Every endeavour is made by the captives to pull down the sides of the stockade, but it is well guarded from the outside, and they are everywhere repulsed either with sharp spears or by blazing torches thrust into their faces. The scene is grand and animating, and continues without intermission for hours. The wild animals, finding escape impossible, abandon hope, and resign themselves to their fate. The next day a party of picked Koonkies and their attendants, usually as naked as at the time of their birth, enter the stockade and surround a captive. The legs are tethered in a moment, ropes as thick as hawsers are thrown round their necks, and they are removed one by one between two powerful elephants to some fixed spot where fodder and water are plentiful, and it is almost incredible how soon they become docile.

Catching Elephants in Pitfalls—This is now forbidden, but still men, in independent States and in our remoter districts, note the way elephants go to their feeding grounds, and dig pitfalls about nine feet deep, just sufficiently broad to hold the body of an elephant and so narrow at the bottom that his feet are jammed. These pits they cover over with boughs, bamboos, &c., scatter leaves, grass, and fresh elephant dung over the surface, and dig other pitfalls at right angles and along all paths in the vicinity.

I went once with a party. It was a dark night, the men lay in wait, and when the elephants entered the pathway, and were only a few yards from the first pit, they created such a din, firing guns and rockets, lighting fires, beating tomtoms, and rushing with lighted torches towards the affrighted herd, that a panic took place. The leader, a fine female, fell into the first pit: the others, on seeing her fate, scattered here and there, and, although there were perils in every direction, only three were caught.

In Upper Burma, in 1856, they had two enclosures close to the walls of Umrapoora. Well trained cow-elephants were let loose. These wandered into the jungles, allowed the males to make love to them, and then allured them into the enclosure. I was told that as many as twenty valuable males had thus been caught in one year. It cost nothing, as the females were let loose in the slack season, when not required for removing timber from the forest, and in almost every case they were found to be pregnant, and brought forth in due time.

F. T. POLLOK.

ELK (*Alces machlis*. Sweden and Norway, *Elg*)—The Elk was in old times, as we learn from early writers, abundant in the forests of ancient Germany, and is still found in the vast swampy tracts of the country once known as Lithuania or East Prussia. But it has in the main gradually retreated northward, and its range may be said to lie nowadays between 57° and 65° N. latitude. It thus inhabits nearly the whole of the Scandinavian Peninsula and Northern Russia, but is rare within the Arctic circle, and extends eastward through Siberia to northern China. Although, given both animals in their fullest development, it never quite attains the proportions of its congener, the Transatlantic Moose, it is, nevertheless, a magnificent beast, forming, as it were, a link between the present and pre-historic time.

Its huge size, its majestically uncouth appearance, its secluded existence and strange hoarse utterances amid the silence of the forest, all seem to indicate it as a representative of the gigantic and otherwise extinct fauna which afforded sport to the hunter of the palæolithic age.

These remarks of course apply chiefly to the full-grown bull, in the glory of his massive palmated antlers, shaggy neck, and enormous, long-nosed, bulbous-lipped head. The hornless cow is simply very big and very ugly, and an elk calf probably one of the most ungainly young creatures in the world. A first-class bull will stand 18 hands at the withers, weigh 90 stone, and possess antlers of from 45 to 50 inches spread, with a foot of palmation, and 20 to 24 tines or points, and these dimensions are sometimes exceeded. His hide is of a dark brownish grey, inclining to black, with a good deal of light colour on the belly and inner thighs; the latter often leads to his detection in the wood. Despite some recent and questionable assertions that the elk in Scandinavia are in danger of ultimate extinction by poaching and over slaughter during the brief legal season, it is an undoubted fact that in the last forty years—in Norway at least—their number has greatly increased, for in the fifties, as the writer can testify, they were seldom seen or heard of in many districts where they are now not infrequent. The truth is that the experience of most sportsmen does not go nearly so far back, and they are apt to overlook the fact that the perhaps frequent cases of poaching are a natural consequence of the great increase of elk. It cannot be denied that the huge deer is a very demoralising animal, tempting many an otherwise honest and law-abiding man to smother all scruples and shoot whenever he gets the chance.

In Norway it is forbidden, under a heavy penalty, to kill more than a single elk, bull, or cow on each farm or registered division of the land, and a return of all kills, with their locality, must be made to the local officials. The shooting of calves is strictly forbidden. As an annual blue-book is published, containing statistics of all the big game and beasts and birds of prey killed during the previous season, the authorities are kept fully posted on the subject. The legal season for elk-shooting is at present (1897) throughout Norway, with possibly an occasional local exception, just thirty days, namely, the month of September, and the returns show that during that time 1,200 deer are, on the average, killed annually in a legal manner.

To give statistics of a private forest, it may be noted that in the seasons from '91 to '96 about 400 elk, bulls, cows, and calves, or an average of over 66 per season, were sighted on the ground rented by the writer, and this in districts where the Lap hunter, born and bred on the place, allows that twenty-five years ago elk were scarce. Of the above number only 31, or an average of 5 per season, were shot, the best bag (to the writer's own rifle) being 9 elk in 1894.

In Sweden it has been hitherto lawful to slaughter bull, cow, and calf wherever they are met, without any restriction as to number or locality, and under this system far too many were killed—about double as many as in Norway. But the Swedish Government has shown itself sufficiently watchful in this direction. Last year it forbade the slaughter of calves, and limited the elk season to fourteen days, and now, by a recent enactment, a close time of three years' duration is to be accorded to the deer.

Now that all traps, spring-guns, pitfalls, and the like are abolished, there are three ways of dealing with the elk. It may be either driven, hunted with the loose dog and brought to bay, or stalked by the aid of a dog always kept in hand by a long leader or leash. In old days

ELK.
Av. height at shoulder, 72 in.; Av. spread at tips, 47 in.; Max spread at tips, 52 in.

driving was practised in Sweden, chiefly in the royal forests, on a grand scale, and as late as 1885 a great "skall" of this kind was organized in honour of H.R.H. the Prince of Wales and other royal personages, when forty-nine elk were killed in the day, while in 1888, only three years later, a bag of sixty-three was obtained on the same ground! But in Norway the rule of "one farm, one elk," renders driving impossible except on an insignificant scale. Elk-hunting with the loose dog has always been a favourite sport in Sweden, and has been, and still is, practised to some extent in Norway, although it is in that country really illegal. This phase of the chase often demands great activity and endurance on the part of both man and dog, for an elk may travel some miles before he will stand. The shooter has then to judge from the baying of the hound how best to make his approach through the forest and get within the range. The old bulls are most easily brought to bay, as they disdain to run.

There can be no question as to this being a grand and exciting sport, but it has its disadvantages, inasmuch as it affords little scope for the science of woodcraft, disturbs a great extent of forest, and necessitates, as a rule—certainly, according to Swedish ideas—the shooting of whatever beast, be it young bull or cow, the dog has succeeded in stopping; otherwise he may continue the chase and not be recovered for half the day, or, if often baulked of blood, may lose his keenness.

The so-called elk-hound is clearly a descendant of the breed of dogs which have from time immemorial accompanied the nomad tribes, Esquimaux, Samoyeds, and Laps, of the North of Europe, and still retains all the characteristics of his race, a coat of thick hair, gray, brindled, foxy, black or white, with an undergrowth of wool, sharp ears and nose, and a bushy, tightly curled tail. There are two types of hound, the one smaller and less stoutly built than the other.

To become perfect at his work, the leash- or stalking-hound should never be loosed, and must be trained to precede the hunter at the length of his tether without straining, to select instinctively the easiest passage among the tree stems, to obey the gentlest motion of his master's hand, and above all to be temperate and mute even under the most exciting circumstances. He will, with a fair breeze and favourable lie of the land, often detect the presence of elk or of fresh spoor at the distance of a mile or considerably more. In advancing towards the quarter where elk are supposed to be, one cannot move too cautiously or noiselessly. The ground in front and on either side, and the depths of the foliage, should be repeatedly examined and penetrated with the field-glasses, and occasional halts be made for the purpose of both gazing and listening intently, inasmuch as the distant snapping, or, on calm days, when the task of the hound is most difficult, even the slight but visible shaking of a branch or young tree will often reveal the whereabouts of a feeding elk, as he crops the highest and tenderest shoots of the young birch, aspen, or mountain ash.

When at length the fresh spoor has been discovered, or, in default of this, when from the hound's eager movements it becomes clear that the elk is close at hand, then the hunter's experience and woodcraft come into play, and on these mainly depends the success of the ultimate approach.

Happily, the chase does not always plunge one in the dark recesses of the forest or the tangled swamp. It may be that the beat of the day will lead toward the uplands, where the elk, and especially the big solitary bulls, will be found scattered among the detached pine-woods, birchen thickets, and willow patches of the lower fjeld, or even on the open moor above. Here the field-glass is in constant requisition, and the sport assumes a strong resemblance to ordinary deer-stalking.

Small families of elk, consisting of bull, cow, and a calf or two, often keep together during the summer and early autumn, but when the rutting season commences about the middle of September, the bulls, who are really polygamous, begin to wander in search of the cows, and, to the satisfaction of the dog, become rankly odoriferous. Then, too, to the satisfaction of the hunter, they boldly betray their whereabouts by scraping conspicuous holes—also odoriferous—in the soil, and cutting young trees to ribbons with their horns, and above all by the hoarse love-call which resounds so impressively through the silence of the forest.

There is little use in following an elk, unless wounded, which has got the wind of man and been thoroughly scared; he will generally travel at a great pace in an enormous circle, and return nearly to the spot whence he started. But if only disturbed by sight or sound, he may relax his speed and be occasionally overtaken by a patient, quiet pursuit. Elk, when conscious that they are followed, resort to many cunning devices to baffle the pursuer, a favourite trick being to take to lake or river for a long distance, and then, on leaving the water, to double back at a sharp angle, thereby placing the hunter to windward of them. They generally lie down to leeward of their trail.

There is no better weapon for elk than a ·450 or ·500 express, and no deadlier shot than through the base of the broad neck. The writer is also able to state that a single soft-nosed bullet from a Lee-Metford ·303, placed in the right spot, will stop a good bull.

HENRY POTTINGER.

[*See also* MOOSE.]

ELK SHOOTING IN RUSSIA—It may at once be stated that the splendid animals which form the subject of this note are not, in Russia and Finland, for the outsider or stranger. Elk are more tenderly protected in the country of the Tsar than any other creature, whether furred or feathered; the close time conceded to these favoured animals lasts, practically, throughout spring, summer and autumn, in Russia, while in the adjoining Grand Duchy of Finland it is illegal to shoot an elk at any time of the year. Moreover, so greatly is the pursuit of elk valued by the higher powers in the land that nearly all the best haunts of these beautiful creatures are strictly preserved by one or other of the relatives of the Tsar.

And yet, for any person who is so fortunate as to experience it, few things are more picturesque or more exciting than an elk battue, held, perhaps, thirty or forty miles from the nearest town, in the dead of a Russian winter, and in the midst of the forest. The elk being the shyest of creatures, as well as one of the

acutest, it is rarely indeed that one is approached by accident, and shot by a favourable chance.

Occasionally, however, in the snow time, a family of elk will come from their sanctuary in Finland, and reach a Russian estate. In search of a change of air or food they come through the deep snow, most probably to the favourite haunts near Lake Ladoga, in the Erinofka district, or to Ostramanch. There they rest, and the keeper, who has been waiting for them, makes a wide circle around them in his snow-shoes, crossing their track but once. Then he makes a smaller circle. If he finds them still within, he places fifty or a hundred beaters around, and sends for his employers, who complete the battue.

FRED. WHISHAW.

EMU (*Dromaius ater*)—The large struthious bird of the Australian plains differs externally from the ostrich in the absence of the highly-developed tail feathers that render the latter so valuable. The emu is swift of foot, so that even in the days of natives and dingoes it managed to hold its own; since these factors have been practically removed, it is on the increase all over the continent. Its great strength, which tells on wire fences, whenever the two collide, renders it in some parts a serious trouble to the squatter, and the governments vote large sums in rewards for its slaughter. In the early days, before the great development of sheep-farming, this bird furnished sport in many ways. One way was to stalk it with rifle and shooting-pony, as colonials do at the present day when after bustards. But the most legitimate, as well as the most sporting method, was hunting it on horseback, with trained dogs that would hang on the bird's neck and bring it down. Nowadays, this amusement has its limitations, for the emus have the sagacity to keep to the sheep-country, and it is impossible to harm them without disturbing a mob of five or six thousand feeding sheep, which would entail more work than the venture is worth. As long as the emu does not come foul of the fences, or crop too much grass in bad times, it is better to leave it alone; and it is therefore only shot occasionally as a favour to a "new chum" who may wish to take a skin back with him.

Nevertheless, the writer has had many an enjoyable run with emus. We ran them with kangaroo-dogs, a powerful cross between the mastiff and greyhound, combining the strength and "stay" of the former with the pace of the latter. Nothing can be more deceptive than the jogging gait of the emu: it is like the apparently heavy flight of large birds, which proves so puzzling to the uninitiated. At the first, the emu seems to have no more pace than a turkey chick: somehow or other he keeps his distance, until, after your station hack has done his gallant best for a mile or so, the game grows monotonous. Should you happen to be in a "buggy" without dogs, the emu makes no move until you come within fifty or sixty yards, when he merely jogs a hundred yards or so off the track, and takes no more notice of the disturber. The writer has often been amused to notice the politeness with which the "old man" emu invariably waits until his wife and family have a start of a couple of hundred yards, when he ambles in leisurely fashion after them. Emus are generally to be seen from the railroad, especially in the summer months; and the writer when going by train to Bourke last November saw a pair of old birds every few

EMU.

minutes, usually accompanied by a family of eight or ten chicks the size of grown turkeys. One old male, indeed, started running parallel with the train, which, as there is no perceptible bend in the line in that part for close on two hundred miles, should have been making good time: yet he kept up bravely for quite three hundred yards before we left him.

The emu trusts to its keen sight to apprise it of danger; indeed, the blacks believed, though wrongly, that the bird was deaf. Among their curious laws was one, strictly adhered to, that only married elders might eat emu's flesh, doubtless a primitive method of preservation.

ARTHUR EDEN.

SPARROW HAWK IN WINTER PLUMAGE.

FALCONRY, or, as it is more commonly termed, *Hawking*, is the art of training birds for the chase, and of bringing them into such discipline and under such control that they will exert their marvellous powers at the pleasure of man. This is one of the oldest forms of sport that has ever been pursued by men of all nationalities. Sir A. Layard, in his work on Nineveh and Babylon, mentions that in a bas-relief found by him in the ruins of Khorsabad there was a figure depicted of a "falconer bearing a hawk upon his wrist." This would establish the fact that falconry existed as early as 1200 B.C. Colonel Delmie Radcliffe (Encyclopædia Britannica) states that it was known in China about 2000 B.C. and in Japan at least 600 B.C. It is certain that in almost all countries of Asia it is the most ancient, as it was, and in some countries is now, the most popular of all sports.

In Europe among the most ancient writers who mention the subject are Aristotle, Pliny, and Martial. Pliny says that "In a part of Thracia beyond Amphipolis men and hawks join in fellowship and catch birds together, for the men drive the woods and beat the bushes and reeds to spring the fowl; then the hawks, flying over their heads, seize upon them and either strike or bear them to the ground, fit for their hands. On the other side the hawkers and fowlers, when they have caught the fowl, divide the booty with the hawks, and, by report, let such birds fly again at liberty aloft in the air and then are the hawks ready to catch them for themselves. Moreover, when the time is of hawking, they will by their manner of cry and flying together give sign to the falconer that there is good game abroad, and so draw them forth to take the opportunities." Thus Pliny on falconry in his day; and if it does not quite well accord with the ideas of the present generation as to the proper management of the sport, yet it is a record that hawking of one kind or another was followed, and on a considerable scale, at that date.

To come to falconry in Great Britain, records are extant of its practice in early Saxon times. In a letter addressed by King Ethelbert, A.D. 748, to Saint Boniface, Archbishop of Mayence, the King asks for two falcons to fly at the crane. In Asser's life of Alfred the Great, the "incomparable felicity" of the king in hunting and hawking, as well as "in all the other gifts of God," is greatly enlarged upon. In the British Museum are numerous early manuscripts ranging from those above cited, through Saxon times (including one attributed to Edward the Confessor), into the Norman period. With the Conquest, falconry became not only the sport of

the country gentleman, but also the appanage of the courtier. In the Bayeux tapestry Harold is depicted embarking for Normandy with a hawk, and after the Conquest the strictest regulations were made as to the class of hawk which each man in his rank or degree might keep. These ran as follows:—

The Eagle and the Vulture for an Emperor.
The Gerfalcon and Tiercel of the Gerfalcon for a King.
The Falcon gentle and Tiercel gentle for a Prince.
The Falcon of the Rock for a Duke.
The Falcon Peregrine for an Earl.
The Bastard for a Baron.
The Sacre and Sacret for a Knight.
The Lanner or Lanneret for an Esquire.
The Merlin for a lady.
The Hobby for a young man.
The Goshawk for a yeoman.
The Tiercel (? of the Goshawk) for a poor man.
The Sparrow-hawk for a priest.
The Musket for a holy-water clerk.
The Kestrel for a knave.

Emperors, it may be concluded, would, except on state occasions, have no use for the birds allotted to them, while princes, dukes, and earls would carry the same bird under a different name. The list seems to be made out more to emphasise the various differences in rank than to prove that the hawks named were actually used by the several classes of men to whom they were allotted.

YOUNG FEMALE PEREGRINE.

Throughout the Norman and Tudor periods falconry was the principal sport of the aristocracy. Apart from its superiority both as a pastime and a science, it afforded one of the principal means of supplying the table with delicacies. Herons were considered a choice dish, and these, with various sorts of game, were captured mainly with hawks in the days before "vile saltpetre" was introduced to make it easy to compass the death of any wild fowl.

In Professor Newton's *Notes on Hawking in Norfolk* (an appendix to Stevenson's *Birds of Norfolk*) we find an account of the visits of James I. to Thetford in the month of May for the purpose of hawking dotterels. The sparrow-hawk appears to have been used, and whether a net was also brought into requisition or not seems doubtful. At Royston, it is recorded how his Majesty partook of the sport of kite hawking, and how both kite and falcon soared to such a pitch that neither was seen again. The Grand Falconer of England was, during this reign, Sir Patrick Hume, who was afterwards succeeded by Sir Thomas Monson. The latter took so much trouble with his charge that Sir Anthony Weldon, in his *Court and Character of King James*, records that the "Master Falconer, Sir Thomas Monson, was in truth such an one as no Prince in Christendom had, for what flights other Princes had he would excel them for his Master, in which one was at the kite. . . . . Sir Thomas Monson desired to have that flight in all exquisiteness, and to that end was at £1,000 charge for falcons for that flight. In all that charge he never had but one cast would perform it, and those had killed nine kites and never missed one." The professional falconers under him were John Wood, with his brothers Robert and Luke Wood for assistants. Besides hawks they trained cormorants for fishing. Luke Wood was sent with three cormorants to Venice, but had his cormorants taken from him *en route* by the Duke of Savoy, "to his great loss and hindrance."

John Wood himself seems to have been a falconer of no little renown—one that, as was said of him, would "toss up a lure in a second that one might have taken for a partridge oneself," and "seemed to know what sort of relish

to give their food by the very feel of their beaks under his finger." But from the days of this excellent falconer history takes a long stride before recording the name of another such professor of the art. The wars of the Commonwealth had intervened, and recreation had to play second fiddle to sterner pursuits. Gunpowder and fowling pieces had been introduced, and falconry was never again to take the place it had formerly held, both as a sport and as an appanage to the general establishment of the nobleman and the country squire. But about 1750 we find Lord Orford practising falconry in the highest style, with the aid, however, of Dutch falconers instead of the old English names. He was very successful in the flight at the kite, which must undoubtedly have been the highest form in which the sport of falconry could be carried on. This flight he pursued both on the warrens of Norfolk and Suffolk, and at Alconbury Hill in Huntingdonshire. Some twenty years later his establishment of hawks passed into the hands of a club known as the "Falconers' Society," later the Falconers' Club, and meetings were held every April for "kite and crow hawking." The establishment in 1783 consisted of "32 slight falcons (or peregrines), 13 German hawks (goshawks), and 7 Iceland falcons." About this period the notorious Colonel Thornton was manager, and controlled the destinies of the Club. From 1792 to 1838 the Club was under the control of Lord Berners, and the establishment was known as the High Ash Club—at this time they flew mainly at herons.

During these days there were doubtless many other establishments of hawks—a few of them large, but mostly small. In Scotland, many a gamekeeper had a knowledge of how to train falcons taken by himself on the ground in his charge. A more pretentious establishment was that of the Renfrewshire subscription hawks, under the control of the famous Scotch falconer John Anderson, and kept solely for game hawking at Barochan Castle. The Duke of Leeds, too, had a magnificent team of hawks flying on Deeside at game and woodcocks, with John Pells and Peter Ballantyne as his falconers. In 1839 the Falconers' Club, finding that kites were extinct and herons getting scarce on open ground in Norfolk, formed, under the auspices of the Royal Family of Holland, the Loo Hawking Club. These were the palmy days of modern falconry, and, under the management of the English-controlled Club and the falconers of the King of Holland, sport was shown such as has never been surpassed. In 1853 the Club came to an end, and hawking has never since been carried on in Holland on a large scale. After a brief interregnum the present "Old Hawking Club" was started, and, under the management of Mr. E. Clough Newcome, who had been for many years the chief guiding spirit of the Loo Hawking Club, fine sport was shown in rook hawking on the Wiltshire downs—the best substitute for heron hawking—and also at game of all kinds in Scotland and England. In 1871 Mr. Newcome died, and in 1872 the Club was re-organized on a larger basis under the auspices of the late Lord Lilford—one of the best of falconers, and the Hon. Cecil Duncombe, and was placed under the management of the Hon. Gerald Lascelles. Since that time it has continued to provide good sport for its members in every branch of falconry, besides training various young falconers, and providing hawks for a number of beginners whose efforts with an untrained bird could only result in failure.

Of private establishments in England may be named those of Major Fisher, one of the most successful of game hawkers; Mr. T. J. Mann, also a game hawker; Mr. W. H. St. Quintin, whose skilful training of peregrines to fly at the sea-gull, as well as his successes with game hawks, entitles him to rank among the best falconers of the century; Mr. Radcliffe, who hawks many peregrines annually in Dorsetshire; the Hon. C. W. Mills, who has chiefly cultivated the goshawk; and Mr. Arthur Newall, whose achievements with that variety of hawk are only rivalled by those of Sir Henry Boynton, of Burton Agnes. Mr. Riley, the Rev. G. E. Freeman, so well known as an able writer on falconry, the Rev. W. Willmott, and Mr. F. Salvin all bear names that are as household words among falconers, even if they no longer train hawks themselves; and there are many other gentlemen who have, with no mean success, taken up this difficult branch of sport.

A science so ancient, and for many centuries so popular as was falconry, has naturally both a language and a literature of its own. As to the former, a glossary of the terms used in falconry at the present time will be found at the end of this article. In former years such a glossary would have been far more comprehensive—every part of a hawk's body, and every action it could indulge in, was dignified by some special name. Many of these terms are obsolete now-a-days, but all those in general use will be found appended.

Of literature there exist books on falconry in every tongue that has been spoken since the days of Babel. The oldest of our English works is the well-known Boke of St. Albans, a treatise on *Hunting, Hawking and Coat Armour*, first edition, 1486. Various other editions followed, and works by different authors, but—to give only the principal and most serviceable thereof—the next work of importance is that of George Turbervile (which contains several very interesting woodcuts), first edition 1575, second 1611. This work is generally bound up with the same author's treatise on hunting, and is a most interesting and excellent work on both subjects.

The same period saw the publication of Symon Latham's *Falcons' Lure and Cure*, which is in many respects the best work on falconry published in the English language. It is, moreover, original, while the work of Turbervile is avowedly "collected," and is in fact a translation of sundry older works written in foreign languages.

The first edition of Latham was published in 1615, the *New and Second Booke on Faulconry* in 1618, and the second edition of both works in 1633. At this time, under the auspices of King James I., himself an able and active falconer, the literature and probably the sport of falconry flourished exceedingly. A year or two after the publication of the last named work, appeared *An Approved Treatise of Hawks and Hawking*, by Edmund Bert, Gentleman. This book deals entirely with the management of the short-winged hawks — the goshawk and sparrow-hawk. It is an original work, and apparently copied in no part from any previous writer, and is a most practical and excellent treatise. Except for the absurd physicking and doctoring of hawks which seems to have been the prevailing practice of the day, it may be said that any beginner who has mastered all that is contained in these two last cited books, and has the skill to put it in practice, is master of the art of falconry.

In 1674 appeared the first edition of the *Gentleman's Recreation*, by Nicholas Cox, a work dealing with sport of all kinds, but not containing much original matter; and the like may be said of a more magnificent folio, entitled *The Gentleman's Recreation*, by Richard Blome, published in 1686, with a series of copper-plate engravings (many of them highly interesting) depicting the manner of pursuing all kinds of sport at that period, and each dedicated to some one of the noblemen and gentlemen who were exponents of these various pursuits and were (presumably) subscribers to what must have been a costly work. We may pass from this period to the year 1773, when a treatise by James Campbell on "Modern Falconry," was published in Edinburgh. That part of the work which really treats of falconry is excellent and reliable, but a ridiculous preface is attached to it describing fabulous sports, which spoils a book otherwise worthy enough. Sir John Sebright's *Observations upon Hawking*, published in 1826, has only one fault, viz., that it is too concise; and in 1841 appeared an original work on falconry by James Belany, not very accurate or reliable.

In 1855 appeared what must be called the standard English work of modern times appertaining to falconry in England, viz., *Falconry in the British Isles*, by Messrs. Salvin and Brodrick, second edition (amended and added to), 1873. The illustrations to the work are excellent, and the letterpress is practical, and in the main reliable. This book is one that no falconer should omit to procure, if possible. *Falconry —its History, Claims, and Practice*, by G. E. Freeman and F. Salvin, appeared in 1895, and is a thoroughly practical treatise so far as the training of the eyas and the merlin is concerned. In 1892 was published the volume of the Badminton Library on Falconry (bound up with that on Coursing), and in this volume the literature of hawking and its modern practice was brought thoroughly up to date, and to its pages we may refer readers who desire the fullest information on these subjects. Space fails us to record the various works in foreign languages which treat of this subject. The earliest printed book on falconry is a German one, published at Augsburg in 1472. Of French works we may mention the ancient ones of Jean de Franchieres, first published in 1531, with subsequent additions ranging up to 1628. Especially should be noticed *La Fauconnerie*, by Charles d'Arcussia, first issue 1598, but published in successive parts until the complete volume was published in 1627. This is one of the most original and interesting works on falconry that has ever been written.

The most magnificent is perhaps the grand work of Schlegl and Wulverhorst—*Traité de Fauconnerie*, published at Leyden, 1844–53, and illustrated by J. Wolff. The accounts of the hawking at the Loo, by the Falconers' Club, referred to above, are most interesting, and the magnificent plates are unrivalled.

Some interesting modern Japanese works, profusely illustrated with pictures of hawking scenes, are in the possession of the author. A magnificent Persian manuscript on vellum, richly illuminated in the margins, is in the possession of the family of the late Prince Dhuleep Singh. At the sale of his various effects this volume was bought in by his family at the price of £410, up to which figure various collectors were willing to bid for its possession. For fuller details of hawking literature we may refer our readers to Mr. J. E. Harting's valuable *Bibliotheca Accipitraria*, wherein a most complete history of the works on this subject will be found.

The hawks used in falconry are of two groups (1) the true falcons or long-winged hawks;—distinguished by a tooth or indentation in the upper mandible; by the formation of the wing, in which the second feather is the longest; and by the iris of the eye, which is of so dark a brown as to give the effect of an eye full, bright, and of an uniform blackness. (2) The true or short-winged hawks;—these have rounded wings, the fourth feather being the longest; their tails are long in proportion to the wings, and the irides are yellow, changing with age to orange or deep red. They are the hawks of the woods and enclosed country, as the falcons are the lords of the open downs and wild moors. The habits of the two species are entirely different, and so, naturally, is their training. The first are termed "hawks of the

lure," the second "hawks of the fist." Of the first, or nobler kind of falcon, those used in England are (1) the Peregrine: (2) the Northern falcons, viz., the Norwegian variety or *Falco gyr-falco;* the Iceland variety, *Falco islandicus;* and the Greenland variety, *Falco candicans*; for purposes of falconry these three varieties may be treated as one. (3) The Merlin; (4) The Hobby —rarely used. In India there are used, besides the peregrine, which in that country, as in all others, is the main "stand-by" of the falconer, the black shaheen—*Falco peregrinator;* the red-naped shaheen—*Falco babylonicus;* the lugger, the cherugh or sacre, used for flying kites, and a variety of the merlin, as well as the European merlin (*F. oesalon*).

Besides these, rarer species are occasionally trained, such as the lanner, the Barbary falcon, and the like; but the management of these varieties is but a *tour de force* on the part of the falconer who may chance to acquire them. Of the short winged hawks, only two varieties are in general use, viz., the Goshawk, *Astur palumbarius;* and the Sparrow-hawk, *Accipiter nisus*. In India two varieties of the latter are also used, termed respectively the Besra and the Shikra.

Adult Peregrine.

In addition to these birds, regularly used in falconry, there are in some countries certain varieties of eagles used for purposes of sport. Of these, Bonelli's eagle is probably the principal one, and this variety has been successfully trained to take rabbits in Europe of late years by M. Paul Gervais. In Central Asia the golden eagle is said to be used and to be flown at both foxes and wolves, but neither of these birds can be said to be used in modern falconry except occasionally.

In this country, as in almost all others, the training of the peregrine is the principal business that is practised. It may be divided into two parts—the training of the eyas, or bird taken from the nest and reared in confinement or partially so, and the reclaiming of the "passage" or wild-caught falcon, entrapped during the migration or "passage" from north to south in the autumn. The first named of these—the eyas —is usually flown at game of all kinds—pigeons, blackbirds, and all the minor quarry. It is naturally more tractable, less easily lost, and more easily managed. A mistake as to condition or training will probably result in some little trouble in re-capturing the bird, but with the wild-caught hawk a similar error would cause the total loss of the falcon.

On the other hand, the wild-caught hawk is, as a rule, higher couraged, swifter, better tempered, and in the proper hands more efficient than any eyas except a peculiarly good one. It is generally used for the rook, the heron, the sea-gull, and similar quarry with which the eyas cannot, as a general rule, cope. When trained to "wait on" for game—especially grouse—the passage hawk flies in finer form, and is better than any but the very best eyases. To sum up the case: a good eyas is as good as a hawk need be, but only one in twenty is to be met with; while out of three passage hawks you may hope to find one that will be superior to nineteen eyases out of twenty, especially if you are aiming at *la haute volée*.

Eyases, or nestling peregrines, can be procured from the cliffs at most of the lofty headlands of the United Kingdom. They are also bred at many inland precipices in the deer forests of Scotland, in most of which they are well preserved. Great care must be exercised in taking them, for unless this be properly attended to the birds will never be worth their keep. They should never be removed from the nest until the white down which covers them in the early days of their existence is entirely replaced by brown feathers—in short, a few days only before they can fly. Hawks taken while in the down can be reared, sometimes, but they are very apt to be attacked by a disease called cramp, which is a contraction, apparently, of the muscles of the thighs and legs, so powerful as often to fracture the young and soft bones, and always to leave the limbs paralysed. It is incurable, and a hawk affected with it ever so slightly should be destroyed at once. Even if hawks thus taken should be reared, they invariably turn out bad tempered screaming brutes, not worth their railway carriage. Young peregrines well taken

are well worth £1 apiece. Those that are ill-taken are dear at almost any price.

Should a nest of peregrines taken in proper order be received, the next step is to rear them properly. To do this they must be fed, and well fed, three times a day at first. Tender beef is the best food, rabbit once a day is permissible, and if warm pigeons, fowls, or even rooks or squirrels can be obtained, freshly killed, they make a good change. But regular and plentiful feeding is essential while the feathers are growing. A curious defect is often seen in the feathers of young hawks, called "hunger trace." It appears in the form of a mark in the web of the feather as though a knife had been drawn sharply across it, half severing the fibres. It will often be apparent right across the tail, every feather being affected. It also appears in the wing feathers, but not so often. Frequently it affects the quill of the feather, and may be felt as a little projecting ridge. In this case it is a serious matter, for the feather is sure to break at that point sooner or later. This defect is caused by irregular feeding, or possibly by a long journey when young. Sometimes, in wild hawks, the stronger nestlings have deprived the weaker of food, or from stress of weather, or the loss of one of the parent birds by the shot gun of some villainous "collector," the whole family has been reduced to short commons. But in either case, where a temporary starvation occurred, the growth of the feather is checked, and the "hunger trace" appears at the point where the feather was, at the time, "just in the blood." Hawks well taken, carefully transmitted, and well reared, do not often have "hunger traces."

The less that the young hawks see of their feeder the better at this period of their career. Eyases are easily made too tame and confidential, and generally show their familiarity by loud screaming and petulance. The first thing to do is to get a little native wildness into them before they are tamed or trained. An ideal place for rearing is a loft or outhouse, with a door opening on to some wild park or secluded ground. There the hawks should be fed by simply placing the food before them as quietly and as quickly as may be, and leaving them to themselves. As they get strong and able to fly, the door may be opened, and they may extend their flights to the neighbouring trees or rails. The pangs of hunger will bring them home to the accustomed board on which their food is placed, which may now be moved to some conspicuous place outside the original loft. By degrees the flight will be extended, but always the young hawks will return to their food, which may now be given to them twice a day only. Soon they will be seen soaring at vast heights, and will range to great distances; and when this state of things arrives—say, in a fortnight or three weeks—the time for catching the hawks has come. To explain this, we must describe some of the tackle which is in general use. Before the young hawk was allowed to fly at all, "jesses" were placed on her legs. These are two short strips of soft strong leather, such as soft horse-skin or well-tanned dog-skin. They are about a quarter of an inch wide for

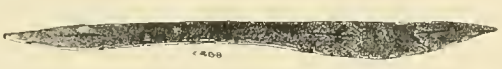


Fig. 1.—Jess.

most of their length (which is about eight inches), and half an inch wide for about two inches at one end, where they encircle the hawk's leg (see Fig. 1). Two slits are made in this wider part, about an inch and a half apart, and, the jess being placed round the hawk's leg, the short end is passed through the slit nearest the middle of the jess; the longer end is brought through both slits and run down to its full length, by which means the jess is neatly knotted round the leg. At the long end of the jess, furthest from the hawk, is a slit about an inch long, which is passed over a swivel (Fig. 2) when the hawk is to be tied down. The end of the jess is passed through one ring of the swivel, and both rings then passed through the slit at the end of the jess. Through the lower ring of the swivel, which should be made of brass, is run the "leash," a thong of leather about a yard long, with a "button" at one end, by which the hawk can be fastened to the block or screen-perch. The latter is generally a pole about three inches in diameter (the plainer and rougher the better) that has had fastened to it a breadth of canvas about a yard wide, hanging loosely down from the under side of the pole to which it is nailed. The object of this canvas is to enable a hawk which has fluttered off the perch to regain its

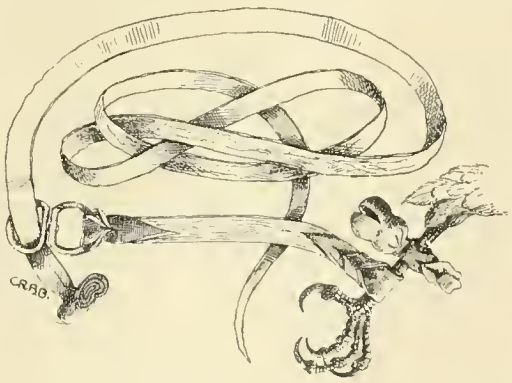


Fig. 2.—Leash and Jess on Hawk's Foot, with Swivel.

position, and, at the same time, to ensure that it shall come up on the same side from which it fell, so that it cannot get twisted round the perch. Of blocks, the simplest are the best. A plain billet of hard wood, with the bark left on about a foot high, with an iron

spike driven firmly into the lower end, which is to be driven into the ground to hold the block in position, and with a staple driven into the centre of the upper surface, is as good as anything. Various improvements for fastening the leash to running rings around the blocks have been devised, but only a few are effective. Bells, either one or two, according to size, should be placed on the hawk's legs. They are fastened on by short straps, called "bewits," on the same principle as the jesses are placed on the legs. The best bells are Indian made, and few others are now in use. Jesses and bells remain permanently on the hawk, and with these the young falcon was equipped before she left her rearing loft. They remain on her all the time she is at hack, and the instrument by which she is to be brought to hand is the bow-net. This is a circular net about three feet in diameter. One half of its circumference is fastened to a light hazel rod bent into a "bow" or semi-circular shape. To the centre of the bow is fastened a line, not less than fifty yards long. In order to

Fig. 3.—Dutch Hood, Front and Back.

set the net, it is spread out on the ground and the loose half of the circle pegged down. Then the bow is laid back, as if hinged on to the fixed half, and the slack part of the net is tucked away under the bow, and concealed by grass, leaves, &c. A piece of meat is fastened in the exact centre of the net, and it is obvious that if the bow be pulled sharply forward the net spreads exactly over the meat and the hawk which has come to feed on it. By such a net as this, set in the immediate vicinity of the board where the hawk comes to feed, each one can be readily captured when required. Jesses and bells are on its legs, the leash and swivel are readily applied, a hood is placed on its head, and it can be tied to a block and left to settle down at once.

Hoods are usually made in Holland, (Fig. 3). Attempts by the falconer to make them usually end in failure. Very good hoods are used of the Indian pattern (Fig. 4), which is in some ways superior to the Dutch pattern, being lighter and more comfortable, but easy for a hawk to get off, and therefore only suitable for use when the hawk is on hand. A third form of hood (Fig. 5) is the rufter hood, but this is only used for freshly caught wild hawks—it cannot

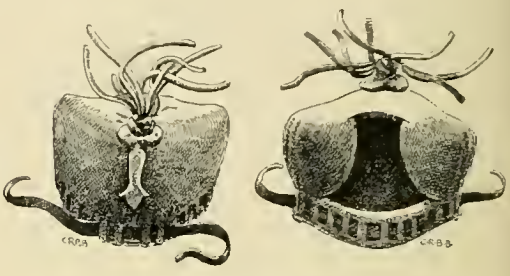


Fig. 4.—Indian Hood, Back and Front.

be taken on and off, and though comfortable to the hawk is only suitable for use in the earlier stages of training.

Training the freshly caught eyas falcon consists, in the first place, of taking her on the fist hooded, and, by constant carriage and handling, gradually taming her. Ere long she can be induced to feed off a piece of meat held under her feet, after her attention is directed to it by stroking or pressing them. As soon as she will pull keenly at this meat through the hood, the meat is offered to her when she is bare-headed, at first, it may be, by candle-light (which has a taming and subduing effect upon all wild birds). In a short time she will, with care and patience, feed as readily bare-headed as she did through the hood. The next stage is to get her to jump to the hand from the perch for food, and this, as soon as she will feed keenly on the fist, she will do: at first a distance of a few inches, which may be gradually increased till she will come the whole length of the mews or outhouse, which may be converted to the use of the hawks.

As soon as the young falcon will feed readily on the fist and will jump to it for food, the "lure" (Fig. 6) must be introduced. This is the instrument by which the hawk is to be recalled to its

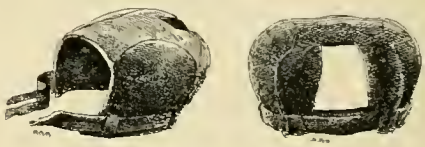


Fig. 5.—Rufter Hood, Side and Front.

trainer from a distance when on the wing, and it must therefore be associated in the bird's mind with reward for obedience and with food. For training purposes, it is usually constructed of a bent piece of metal such as a horse-shoe,

Grouse Hawking

well padded with tow and covered with leather, the object being to make the lure too heavy to be carried and so soft that a hawk cannot injure itself by stooping hard at it. This padded horse-shoe is then covered over with the wings of birds so as to resemble a dead quarry, and furnished with strings to which meat is fastened. For a day or two the hawk is fed on this lure. As soon as it is accustomed to it, the lure, well furnished with food, is tossed to a distance, and the hawk allowed to fly to it, and to "feed up." In a few days the pupil will hasten to it from as great a distance as it can be seen, and may then be termed a trained hawk. As soon as it will thus fly to the lure, the falconer, after calling it from a distance, will conceal the lure as the hawk approaches him. This will cause it to fly round him, ringing upwards, expectant of its food: after thus keeping it "waiting on," as it is termed, the lure is thrown out and the hawk rewarded. When a few lessons of the kind have been given, the hawk will wait on its master for a considerable time, never straying far from him; and yet, if a good one, rising higher and higher, the longer it is kept on the wing. A few live pigeons given from the hand will go far towards raising its pitch and imparting dash and keenness to the young hawk. When this stage has been reached, the young falcon is fit to fly at game. The first essay should be from a steady point at grouse or partridges in a good open country. The falcon should be "waiting on" as high as she will go, somewhat up wind of the dog. The falconer should have "headed the point" and got the birds between himself and the setter. When the hawk is well placed he will flush the birds, and should the young falcon kill readily she may be considered as well "entered," and the rest of her career depends solely upon plenty of work and good chances.

With eyas falcons may be killed grouse, partridges, wild ducks, pheasants in the open,—game in fact of all sorts. Tiercels so trained will kill magpies and partridges well, and even give good sport at blackbirds, in certain places. For general purposes they may be termed the most useful description of hawk that can be employed.

The passage, or wild caught peregrine, is trained in precisely the same manner as the eyas, but, as it is far wilder and more shy, its education must proceed more gradually. The falconer must take infinitely more time and care, but the steps, though slower, are the same in character. More time and more patience are needed to induce the passage hawk to feed readily on the fist. When it will do this by candle-light, care and time will be required before the same degree of confidence is won by day-light. So also, in training to the lure, much time and care must be exercised in accustoming the hawk to that essential attraction while she is confined in a long string, and before she flies loose. But with patience and skill all shyness can be overcome. Starvation must never be resorted to. By its means the hawk can readily be reduced to subjection, but when so reduced it is but a worthless, and generally unhealthy, creature, useless for any purpose. The great object of the falconer must be to induce his timid pupil to feed well and keenly, and to rely on time and patience to effect its reclamation and to win its confidence. In all cases, the greatest care must be taken to accustom each hawk so completely to the use of the hood that she will allow herself to be hooded without trouble.

Passage hawks are generally, for their first season, flown "out of the hood," *i.e.*, straight at the quarry. This, generally, is the rook, heron, or some similar bird, according to the country where it is used. The higher training of "waiting on" is not always needed before the hawk is used, but it follows very rapidly when once

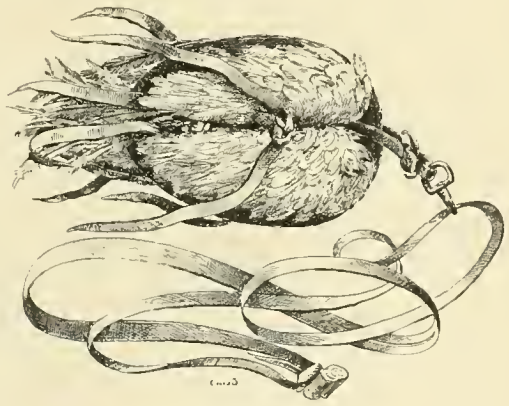


Fig. 6.—Lure.

the hawk is accustomed to look to her master for the lure. Once that is learned, there are no hawks steadier, more gentle, or more satisfactory to deal with than the wild caught ones. In ability they are, naturally, as professionals to amateurs. They have maintained themselves, and in some cases reared broods by the power of their flight, whereas the eyases have never flown at a wild bird, except one flushed for them by their master.

The Gerfalcon, in its three varieties, whether that of Greenland, Iceland, or Scandinavian, is the noblest falcon—in appearance at least—of all that are trained by man. In performance, however, it is apt to be somewhat disappointing. Most of the specimens used in this country are ship-caught birds or nestlings badly reared. In either case their plumage is so damaged and broken that they have to stand idle for a long time till the moulting season restores to them their powers of flight. Such hawks can hardly

be said to have a fair chance. But in 1869, and again in 1876, falconers who were sent to Iceland and to Norway returned with consignments of these hawks in splendid order. Whether the art of training them is lost, or from what other causes failure arose, is uncertain, but only a few of these noble birds realised the expectations that were formed of them. Those that did were perhaps the finest hawks that have ever been flown in this country. But the damp climate was against them, the lungs of one hawk after another became affected, and before very long all the lot died. A very fine tiercel was caught in Holland in 1878, and was trained successfully by the falconer to the Old Hawking Club, eventually turning out to be a brilliant rook hawk. But the special quarry for these falcons in old days was always the kite, which is now extinct in these islands, so that the chief object in training them is lost; and the modern falconer, especially the beginner, will act wisely if he confines his efforts to training the peregrine.

GERFALCON.

The merlin is the smallest of the hawks used in falconry. It is a true falcon, though in some respects it is allied to the hawks. It possesses courage altogether out of proportion to its size, and, though not larger than a dove, will kill pigeons or partridges larger than itself. It is, however, best, and chiefly used for flying at larks—a beautiful form of falconry resembling heron hawking in miniature. Two merlins are generally used, and the lark in his efforts to escape will usually ring into the very clouds, often out-flying the hawks, which will follow him frequently till all three become lost as specks in the clear sky. Merlins are best kept loose in a large room, and called to hand when wanted for use. They are very delicate, and must be fed sparingly in the morning, and fully when the day's sport is over. It is the exception for them to be kept alive through their first winter, though some have been kept until the second.

The hobby is another miniature falcon, possessed of even more exquisite powers of flight than the merlin, but of less courage. It is hardier and more easily trained, but cannot be relied upon to follow its quarry with perseverance.

The merlin breeds freely on the moors in the northern counties of England and in Scotland. Its nest is on the ground and usually contains four young. The hobby, on the contrary, is a breeder in the southern and midland counties of England, and nests in trees.

Of the true hawks, as opposed to the falcons,—distinguished by having a smooth upper mandible instead of a tooth or festoon, by a yellow or orange iris to the eye, and by a long tail with short rounded wings, instead of long pointed ones—only two varieties are used, viz., the goshawk and the sparrow-hawk. The goshawk breeds freely in France, Germany, and Scandinavia, but has been practically unknown in a wild state in this country for fifty years past. It is of larger size than the peregrine, and exceedingly powerful in its grip, so that it can take rabbits with ease. The stronger females can readily hold a full-grown hare. The male is flown at partridges in enclosed country—at pheasants, water-hens, and birds of slow flight, and the strongest will take rabbits well enough.

Short-winged hawks are only hooded when travelling. They require constant carriage at all times to accustom them to strange objects of every sort, and to keep them tame and in good heart. Training consists in thus taming them till they feed readily on the hand; then in accustoming them to jump to the hand for food. Gradually the distance is lengthened till

the hawk will come to the falconer's fist, with or without food, as far as she can see him. As an old writer says: "She should know no perch but my fist, and when she goes to rest I will go with her." A hawk thus trained to regard the fist as her home, her feeding-place, and her resting-perch, will never give trouble by taking perch in trees and refusing to be called down; but such a result can only be gained by incessant care, patience, and perseverance. Bagged rabbits are necessary to enter the hawk with, and afterwards excellent sport may be obtained at wild ones sitting out in grass parks or fields. A goshawk intended for hares should be kept solely to them—if accustomed to an easier quarry they will cease to persevere at one that taxes them severely. Goshawks should be kept on a bow perch or on the screen-perch in the mews. They must never be allowed to be near other hawks or falcons, as they are very prone to "crab" or fight with them, and will inevitably kill them.

Sparrowhawks are trained in the same way as goshawks, but they are delicate and highly nervous little things, requiring care and gentleness in their management as well as infinite patience. They are usually flown at blackbirds and thrushes beaten out of hedgerows, and the best females take partridges well. Almost any number of small birds may be taken with a good sparrowhawk, as many as 327 having been caught in a single season, but they do not give the same sport as the larger birds named.

In the old English writers we find a great deal about the diseases of hawks and their treatment, and many of the prescriptions and modes of treatment are most complicated. Modern practice, however, does not follow the ancient lines in this respect, and medicines are few and sparingly used. In the East, however, the difficulties of a hot climate, and consequent disinclination of hawks to fly, are still overcome by the constant use of drugs. A few words as to the simpler remedies now in vogue and as to daily management are added here.

On each fine morning the hawks should be set out, each on its own block, bareheaded, on turf in some quiet field or garden, and so left for about two hours. A bath should be offered to each one (hawks are great bathers), and if not given this opportunity will often disappoint the falconer by raking off in search of water. Milk-pans make very fair baths, but a better one is made of the end of a large cask sawn off so as to be about seven inches deep. When hawks are bathing constantly, their jesses and leashes must be kept well greased. Good dog-skin is the best leather for these where it can be procured. Calf leather or "kip" is good, and the toughest of all is horse-skin, which is good and durable, but must be kept well greased.

After about two hours of "weathering," the hawks may be hooded up, and either left on their blocks or removed to the mews until they are taken out to fly. Whatever training or discipline a hawk may be undergoing, a gorge, or full meal, must be given not less often than once a week; and the bigger in condition a hawk can be kept, so long as she be obedient, the better she will fly. "Castings" must be given regularly, if daily it is none the worse. They consist of several mouthfuls of fur or feathers with skin, which it is natural for all hawks to swallow while tearing up their prey. The skin of the head or neck of a pigeon makes a capital casting. In the morning these feathers or fur are ejected in the form of a pellet. By its condition the state of a hawk's health is surely indicated. If the casting is hard, firm, and dry all is well, but if it be soft and slimy, mixed up with mucus and undigested meat, something is wrong. A broken feather is a serious handicap to a hawk, and must be repaired or "imped" immediately, for if once a gap be

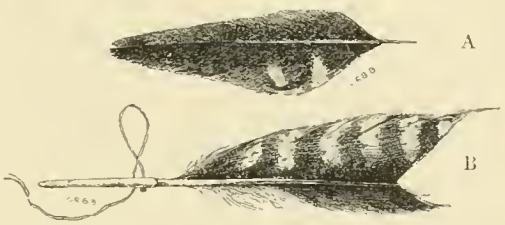


FIG. 7.—A, "IMPING" WITH NEEDLE. B, SEWING IN.

established in wings or tail, more feathers will become injured.

Imping is usually accomplished by means of a needle,—three-sided as to shape, sharp at both ends, and of a size to match the particular part of the feather that is broken. This feather is neatly cut with a sharp knife at an angle, and another feather, moulted by some hawk, or saved from a dead specimen, is cut at a corresponding angle and to the precise length that will supply the broken piece. The needle, dipped in a little brine or vinegar, is pushed half into the feather actually growing in the hawk's body and half into the new piece. When pushed close up the joint is hardly perceptible and the needle, rusting, will hold all firmly in place. (See Fig. 7, A.)

Sometimes the feather is broken actually in the quill, where no needle is available. In this case a whole feather from a dead bird is taken and the quill thereof cut into the shape of a pen, minus the nib. This pen-shaped quill is pushed carefully into the corresponding quill growing on the hawk, and secured by passing a waxed thread through both quills, lapping it around the joint and making fast. If care is taken to make the feather set at the right angle, this joint is almost impossible to detect. (See Fig. 7, B.)

Hawks, like other animals, suffer from cold,

and the form of the complaint takes that of a disease known as "*croaks*" or "*kecks*," from the incessant noise made by the hawk when exerting itself in any manner, as by bating or flying. It is the same as a bad cough in beasts, and is cured in the same manner, viz., by high feeding—and that on hot food, by keeping it warm, and avoiding risk of colds. Plenty of casting should be given.

Frounce is a canker or disease of the hawk's mouth and throat, difficult to cure, and in bad cases often fatal. The remedy is to dress the throat with burnt alum and vinegar, scraping off the canker as it forms with a quill or penknife before dressing.

Hawks often suffer from inflammation of the crop. The symptoms are green offensive mutes, and in bad cases a throwing up of the contents of the crop. The remedy is to give two or three doses of powdered Turkey rhubarb, about 4 grains to a dose. Light food should be given, warm and fresh killed, and in small quantities, frequently.

These simple remedies will meet the case in most diseases, but where the hawks are carefully managed, according to the rules given above, diseases will rarely have to be dealt with.

GERALD LASCELLES.

GLOSSARY.

Austringer—Old term for Falconer. Also spelt Ostringer.

Bate (of the hawk)—To flutter off the perch or fist owing to wildness or a fit of temper.

Bewits—Short leather straps by which bells are attached to the hawk's feet.

Bind (of the hawk)—To fasten on the quarry whilst in the air.

Block—The piece of wood on which falcons are placed when at rest.

Branchers—Young birds just able to fly from branch to branch. Also called *Boughers*.

Brail—A thong of soft leather with a small slit, through which is inserted the first joint of a hawk's wing, so as to confine it in its natural position and prevent the hawk from bating.

Cadge—A wooden frame with padded edges upon which hawks are taken into the field.

Canker—A tumour in a hawk's throat.

Carry (of the hawk)—To fly off with her quarry when the falconer comes to take her up.

Cast—(1) Two hawks: not necessarily a pair. (2) Verb: to hold a hawk above the pinions to keep her down when administering anything to her. Obs.

Casting—(1) The ejections of indigestible matter from a hawk's mouth. (2) The fur, feather, or tow given to them when in captivity in order to assist the process.

Check (of the hawk)—To leave her proper game and fly after something else that comes within view.

Cope—To trim or pare the beak and talons of a hawk.

Crab (of hawks)—To fight with each other.

Creance—A fine long line which is attached to the *leash* (*q. v.*) when extra liberty for the hawk is desired. It is chiefly used during the time of training.

Croaks—A sort of cough to which falcons, especially peregrines, are subject in this country. Also called Kecks.

Deck-Feathers—The two centre tail feathers.

Endew (of a hawk)—To digest its food thoroughly.

Enter—To give a new hawk the first sight of the game that it is to pursue.

Eyas—A hawk taken from the nest before it can fly, and brought up in captivity. Also spelt Eyess.

Eyrie—The nest of the hawk.

Falcon—(1) As used by falconers, the female of any hawk as opposed to the male. (2) As used by naturalists it denotes the long-winged members of the Falconidæ, which are further distinguished by a sharply defined tooth near the top of the upper mandible.

Falconer—The chief attendant in charge of the hawks.

Falcon-Gentle—The female of the peregrine falcon (*q.v.*).

Feak (of a hawk)—To clean the beak and feathers after feeding.

Flush—To put up game.

Foot (of the hawk)—To seize the game with the foot.

Frounce—A cancerous disease in the mouth and throat of hawks.

Gauntlet—The leather glove worn by a falconer.

Gentle—The special title of the peregrine, which could only be possessed by noblemen.

Ger-Falcon — *Falco gyrfalco.* The Scandinavian variety of the large Northern falcons. In plumage somewhat like the peregrine (*q.v.*), but bluer upon the flanks. It nests in Scandinavia.

Get in—To go up to the hawk when it has killed.

Gorge—(1) A full meal given to the hawks once or twice a week. (2) The crop. (3) Verb: to feed heavily.

Goshawk—*Falco palumbarius.* The largest of the short-winged hawks, or hawks proper. It is chiefly used for hawking pheasants and rabbits. The back is brown, the breast, of the adult bird, white, barred with brown: salmon colour streaked with dark brown in the young bird.

Greenland Falcon—*Falco candicans.* A variety of the ger-falcon. It may be distinguished by the greater preponderance of white in its plumage.

Gyr-Falcon—[*See* GER-FALCON].

Hack—The state of liberty in which young long-winged hawks are kept for a few weeks before pairing. They are loose to fly about, but are fed punctually at the hack-board every morning and later in the day. They are sometimes weighted with heavy hack-bells to prevent them from preying for themselves. Old falcons are sometimes put to "live at hack" if out of condition, but the hawks proper are rarely put out at any age.

Haggard—An adult bird taken wild.

Hawks Proper—Those members of the Falconidæ whose wings are shorter than the tail, and whose upper mandible lacks the sharp tooth. A further distinction is found in the iris, which in the hawk proper is yellow, but in the falcons very dark brown. Typical hawks proper are the goshawk and the sparrow-hawk.

Hunger-Trace—A line which appears across the feathers of a hawk that has been starved for a time when her feathers are growing down. It has the appearance of a knife mark drawn across the feather at the point where it, at the time of hunger, joined the flesh. The feathers often break off at the point where the line crosses the ribs.

Iceland Falcon—*Falco islandicus.* Another variety of the ger-falcon.

Imp—To mend the broken feathers of a hawk.

Intermewed—(1) A hawk is intermewed from the first exchange of her coat until she becomes a white hawk. (Latham and Campbell.) (2) Of a hawk that has been moulted in confinement (Lascelles and Salvin.)

Jack—Male of the merlin.

Jerkin—Male of the gerfalcon.

Jesses—The leather thongs (about six inches long) permanently attached to the legs of a hawk, and fastened to the swivel.

Jouk (of a hawk)—To sleep.

Kecks—[*See* CROAKS].

Leash—A leathern thong fastened by a swivel to the hawk's jesses in order to secure her to perch or block.

Long-Winged Hawk—[*See* HAWK and FALCON.]

Lure—A padded piece of wood or iron with feather

and meat attached to it by which the hawk is attracted to the falconer. The hawk is at first fed upon it, and taught to fly back to it when swung aloft in the air.

Mail—The breast feathers of a hawk.

Make in (of the falconer)—To go up to a hawk after it has killed.

Make a Hawk—To train a hawk. Also *Man* and *Reclaim*.

Make to the Hood—To accustom a hawk to the hood.

Man—In training a hawk; to accustom it to the sight of human beings.

Mantle (of a hawk)—(1) To stretch out wing and leg in order to gain relief by change of position. (2) To sit permanently with wings and tail spread. A sign of ill-temper. (Lascelles.)

Merlin—*Falco æsalon*. The smallest of the hawks, but a true long-winged falcon; has been known to kill a partridge. Chiefly used for larks and snipe.

Mew (of a hawk)—To moult.

Mews—The place where hawks are kept.

Mites—Parasites of the order Acarus, which infest the head and nostrils of a hawk.

Mount (of the hawk)—To wait on high.

Musket—Old term for the male of the sparrow-hawk.

Mutes and Mutings—The excrement of a hawk.

Nares—The nostrils of a hawk.

Pannel—The lower bowel of a hawk.

Passage—The regular flight of any quarry to or from its feeding ground, and the annual migration.

Passage Hawk—A bird taken during the migrations.

Pelt—The dead body of the quarry.

Perch—The pole or rail on which hawks are kept within doors.

Peregrine—*Falco peregrinus* or *gentilis*. The adult colouring is blue grey upon the back, ashen grey upon the breast barred with black. The young are brown on the back with longitudinal markings on the breast, which is pale buff. The length of the male is sixteen inches; of the female twenty-one and a half inches. Also known as Slight Falcon, Gentle Falcon, and *the* Falcon.

Petty Singles—The toes of a hawk.

Pitch—The highest point to which a hawk rises when waiting on.

Point—The perpendicular rising of a hawk over the place where its quarry has put in.

Pounces—The claws of a hawk.

Put in (of the quarry)—To take shelter in cover.

Put over (of the hawk)—To digest by passing the food from the crop to the pannel, or lower stomach.

Quarry—The object at which the hawk is flown.

Rake (of the hawk)—To fly wide of the quarry.

Ramage (of the hawk)—Wild and difficult to reclaim. Also called *Rammish*.

Ramage Hawk—Sometimes used for a hawk in its first year. Equivalent to *Soar-hawk*.

Rangle—Small stones given to a hawk to aid digestion.

Reclaim—[*See* MAKE and MAN.]

Red Plumage—The colouring of the young bird as contrasted with the blue of the adult. Hence Red Hawk.

Ring (of the hawk)—To mount in wide spiral circles.

Rouse (of the hawk)—To shake its feathers.

Ruff (of the hawk)—To strike the game without seizing it.

Rye—Old term for a cold in the head of the hawk. Also called Snurt. Obs.

Sacre and Sakeret—*Falco sacer*. A hawk largely used in the East, especially in India. Formerly found in Europe, but now extremely rare. It belongs to the group of desert falcons.

Sails—The wings of a hawk.

Screen—The perch, hung with canvas, on which hawks are set indoors.

Seel—To sew up the lower eyelids of a hawk, and tie the threads behind the head. An obsolete practice now superseded by the hood.

Serve (of the falconer)—To put out the quarry from the cover for the falcon waiting overhead.

Short-Winged Hawk—[*See* FALCON and HAWKS PROPER.]

Slight Falcon—[*See* PEREGRINE.]

Soar-Hawk—A hawk in its first year before it has moulted. Also called *Ramage-Hawk*.

Sparrow-Hawk—*Falco nisus*. A true short-winged hawk. The back of the adult male is blue-grey, and the breast a rusty white, barred with dark grey and red. The female and the young birds are brown, breast white barred with dark grey. The male is usually twelve and the female fifteen inches long, and the average weights are said by Montague to be five and nine ounces respectively.

Stoop—The rapid descent of a hawk from a height upon its quarry.

Summed (of a hawk)—Having all its feathers complete and ready for flying.

Swivel—The link attaching the jesses to the leash. It turns freely in order to prevent entanglement.

Talons—The claws of a hawk.

Tarsell, Tassell, Tiercel, Tercel—The male hawk as opposed to the female. Said to be derived from the fact of its being a third, or "tierce," smaller in size.

Tiring—A piece of tough food, such as the leg of a fowl with the flesh taken off, given to the hawk to afford it something to do.

Towering (of the hawk)—To soar above its quarry.

Train Bird—The bird at which the hawk is first practised by letting him fly at it when held in check by a fine cord.

Truss—To seize the quarry in the air, and fly off with it.

Varvels—Small rings of silver formerly attached to the jesses, on which the owner's name was engraved.

Wait on (of the hawk)—To soar above the falconer or dogs waiting for the game to be put up.

Wake or Watch (of the falconer)—To sit up all night with a newly-caught hawk in order to tame her.

Weather (of the falconer)—To place hawks unhooded upon their blocks in the open air.

Yarak—An Indian term, meaning a state of eagerness and expectancy which hawks reach when ready for flying. It is chiefly applied to the short-winged hawks. (Salvin.)

FALLOW DEER (*Cervus dama*)—A.S. *fealo*; German, *falb*, pale yellow.

Colour—The natural colour of the species in a wild state in summer is a bright fawn, with white spots irregularly distributed over the upper parts of the sides and haunches, the spotted tracts being bounded by indefinite white lines. In winter the spots disappear, the coat being changed in May and October.

Distribution—The Fallow Deer is believed to be not indigenous to England, but to have been introduced in Roman times, though it may have been later, from countries bordering the Mediterranean. In a wild state it is found at the present time in Southern Russia, Asia Minor, the island of Rhodes, parts of Greece, North Africa, Sardinia, Spain, the Cevennes Mountains, and the Alps of Dauphiné.

The Persian Fallow Deer (*Cervus mesopotamicus*) found also in Asia Minor, is regarded as a distinct species. Both *Cervus dama* and *C. mesopotamicus* are conspicuously distinguished from animals of the red deer type by having the antlers considerably palmated, instead of being entirely cylindrical, the palmation in the Persian

form extending to the base of the horn, instead of being wholly above the main beam as in our Fallow Deer.

In many parts of England, Fallow Deer formerly ranged in a wild state, unrestrained by any inclosure. This was notably the case in Cranbourne Chase, in the New Forest, and in Epping Forest, where, at the present day, there is a small herd of the dark brown variety, locally known as the "old forest breed." A noticeable peculiarity in this herd is the remarkable attenuation of the palmated portion of the antlers, resulting from isolation and deterioration through breeding in and in. Some interesting remarks by the Hon. G. Lascelles on the change of colour in the Fallow Deer as observed in the

FALLOW DEER.
Av. Ht. at shoulder, 36 *in.* *Av. horn meas.* 30 *in.*
Max. horn meas. 36 *in.*

New Forest, will be found in the *Zoologist* for October, 1892.

Measurements—The Fallow buck usually stands about 3 feet at the shoulder, and measures about 5 feet in length, including the tail of 7 inches. The weight varies according to the feeding in different parks; the bucks averaging from 100 lbs. to 120 lbs., and the does from 50 lbs. to 60 lbs.

Habits—The pairing season begins in September, and the period of gestation is eight months. Usually one fawn is produced, sometimes two, more rarely three. They are dropped about the end of May or beginning of June, just as the fern is high enough to conceal them. Exceptionally they are dropped in autumn. The horns are shed in the spring, usually in April or beginning of May, the exact time depending upon age and temperature; a cold winter and protracted spring causes them to be shed later than would be otherwise the case. The younger animals retain their horns somewhat later than the older bucks. The shed horns are often picked up and eaten by the deer themselves, the saline flavour being relished by them. Bucks, if gelded after they have cast their horns, will never grow them again; if while growing, they will never shed them.

Fallow Deer venison is generally preferred to that of the red deer, being usually much fatter, though not so well flavoured. The bucks are killed in August, the does in January. Buck hunting begins on September 15th.

J. E. HARTING.

FENCE MONTHS—(*See* also GAME LAWS).

BRITISH ISLANDS—**Close time** or close season for fish is the time during which it is illegal to take, and not only to take, but to sell or have in possession for sale, the fish to which the close time applies.

Close time may be divided into three parts, concerning:—

I. Salmon and migratory trout.
II. Trout.
III. Freshwater coarse fish.

I. **Salmon**—In England and Wales the close time for salmon was fixed, by the Salmon Fishery Act 1861, from the 1st September to 1st February, both days inclusive, for all modes of fishing but rod and line, and for rod and line from the 1st November to 1st February. By the Salmon Fishery Act 1873, power was given to Boards of Conservators, with the consent of the central authority, to vary the close time in the districts; and, to the great injury not only of the fisheries in the district, but also of the fisheries generally, this power has been acted on to a considerable extent. In the report of the Inspector of Fisheries for each year, a list of the different close times in force in the different districts is given. If it is not varied, the time is, for rod, 1st October to 1st February, for all other modes, 1st September to 1st February. English salmon may only be legally sold if taken during the open season. Salmon taken by rod during the open season for rod cannot be sold. The fish seen in fishmongers' shops during the English close season are *said* to be Scotch fish or foreign, although often really poached English fish.

In addition to an annual close time, there is also a weekly close time for salmon from noon on Saturday to 6 A.M. on Monday. Power has been given to Fishery Boards to extend this, and in some cases (as on the Christchurch Fishery) it has been done. It only applies to fishing other than with rods.

In Scotland the close time is more variable than in England, and in some cases has been fixed by local acts. On the Tweed the rod fishing is open till the end of November.

In Ireland the close time is also very variable, but there it is fixed for the different districts by the Inspector of Fisheries.

The result is that the law as to salmon close time is in the most hopeless state of confusion, and, except the month of December, there is no time when, in some part of the United Kingdom by some means, salmon cannot be legally taken.

II. **Trout**—In England and Wales the close time for trout is from the 1st October to the 2nd February (for Thames trout 11th September to 31st March). There is also a power for Fishery Boards to vary this time, and in some cases the power has been exercised, usually by extending the close season to March. In Scotland there is no close time for trout.

III. **Freshwater (Coarse) Fish**—In 1878 a close time from the 15th March to the 15th June was introduced for

freshwater fish, which are in effect all fish but trout and salmon. (In Norfolk and Suffolk the close time is 1st March to 30th June.) The close time, however, does not apply to landowners fishing in their own water or to persons to whom they give leave. It has also been altered by statute as to eels, and is now only applied to fishing for or taking eels with a rod and line. Presumably, all persons fishing between March and June are fishing for trout. Fishery Boards have power to except either the whole or part of the district from the close time, or any particular kind or kinds of fish, and orders under both these heads have been made by certain Fishery Boards.

On the whole, there is no subject which is more confused than that of the close time for fish; and except the general rules that the close time for salmon is from 1st September to 1st February, trout 1st October to 1st February, freshwater fish from 15th March to 15th June, unless locally varied, it is impossible within the limits of an article to state what the law is.

The Fishmonger's Company annually issue a table of the different close times in force, and the appendices to the reports of the inspectors in the three kingdoms contain the official notice of what the close times are in the different places.

J. WILLIS BUND.

CANADA, DOMINION OF—

Province of Ontario.

Trout	Sept. 15th to May 1st.
Black bass and Mascalonge .	April 15th to July 15th.

Province of Quebec.

Salmon	Aug. 15th to Feb. 1st.
No Sunday fishing.	
Trout	Oct. 1st to May 1st.
Ouananiche (land-locked salmon)	Sept. 15th to Dec. 1st.

FRANCE—

Salmon	Sept. 30th to Jan. 10th.
Trout	Oct. 20th to Jan. 31st.
Coarse fish	April 15th to June 15th.

[If June 15th should fall on a Sunday, or even Monday, it is usual to make the opening day on the Saturday preceding, so as to give the working men an extra Sunday, the chief day for angling in France.]

GERMANY—The fence-months for fish differ considerably in the various provinces, but the general system embraces a winter close time (October 15th to December 14th); a spring close time (Prussia, April 15th to June 14th; other provinces, April 10th to June 9th), and a weekly close time of at least twenty-four hours (from sunset on Saturday to sunset on Sunday). These restrictions, which are subject to local modifications, do not extend to closed waters. The most complicated regulations are those in force in the kingdom of Bavaria, where some nineteen fishes are specified in the act, each with a close time of its own, those for salmon (and sea-trout) and trout being respectively October 1st to December 31st, and October 20th to January 20th.

NORWAY and SWEDEN—

Salmon and sea-trout	
(*a*) Rivers, estuaries, and lakes	Sept. 14th to Apr. 15th.
(*b*) Brooks, or on the sea coast	Sept. 14th to Feb. 14th.

UNITED STATES—All laws relating to fish and game in the States which constitute the United States are enacted by the legislatures of each state separately, and therefore what may be lawful in one state may be unlawful in another and adjoining state.

Each state may have general and special laws, *i.e.*, laws which relate to the state at large, except certain named counties of the state or even certain townships of a county. Some states have laws which forbid the shipment of fish or game within the state unless it is accompanied by its owner, and some have laws forbidding the shipment of fish or game beyond the borders of the state.

The close times for the same species of fish may differ in different states or even in different counties of a state—not a great difference, but enough to prove a snare to the uninformed—and so, altogether, the "game laws," the term usually applied to acts governing furred and feathered game and to fish as well, prove a labyrinth to the unwary.

Class legislation is dead. Broadly stated, it is the intention of the game laws of the United States to-day that all wild game and fish shall become the property of him who reduces them to possession, by killing or catching, with due regard to the laws of trespass on private property, be it land or water. Wild game and fish are not to be molested during the season of reproduction, and they must be allowed free and unobstructed passage to their breeding grounds or waters.

Changed conditions in recent years have made it necessary to elaborate these fundamental laws; to draw them more closely and define them more clearly until, as a whole, they have become multitudinous and almost hopelessly confusing to one who desires to fish or shoot in the different states of the Union, and who has not made a study of the laws from year to year as enacted. To add to the confusion, the states having annual sessions of the legislature (the law-making body) each year amend, repeal, make new laws, or change the open season for both fish and game. The tendency of the game laws in recent years is to shorten the close seasons and to increase the penalty for violating the laws; at the same time a constant warfare is waged by a body of thinking men on the one hand, to simplify the laws and make them less cumbersome by eliminating the special provisions which relate only to detached ponds or streams, and on the other hand by a horde of people who seek some personal advantage by excepting from the operation of the law waters in which they have a local interest.

The spread of civilisation; the destruction of the forests, drying up of the fountain heads of rivers and brooks; improved engines of destruction which thin out the fish and game; better means of transportation which carry devastation to the remoter habitats of this food supply; the sewage and refuse from towns, mills, and factories, which have made streams unfit for food fish; the increase of population, and the growing love of all that relates to sport and out-door life, have combined to make rigidly enforced game laws a necessity to preserve fish, birds, and animals from utter destruction. The lawless will always oppose the game laws, no matter how just or how necessary they may be, and the law-abiding must always strive for their enactment and enforcement.

In giving the close seasons (fence months of England) for fish in the principal states, I shall deal only with the so-called "game fishes," and refer alone to the general laws, omitting, except in special instances, the local laws which govern small bodies of water within the states. Any one who may desire to study the fish, bird, and animal laws of all the states in detail should procure the *Game Laws in Brief*, published at a nominal sum by the Forest and Stream Publishing Company, New York City. This "Brief" is amended annually, or oftener as occasion requires, and is a safe guide to any who desire to observe all the laws of all the states in the Union, and contains the laws of the Dominion of Canada as well.

Some fifty states and territories have enacted fish and game laws more or less elaborate and complicated, but fortunately not all of the states afford fishing to attract visitors from outside of the borders of the state.

New York State.

Kind of fish.	*Closed season.*
Trout	Sept. 1st to April 15th.
(This refers to brook, brown, rainbow, and Loch Leven trout).	
Lake Trout (*Salvelinus namaycush*)	Oct. 1st to April 30th.

Kind of Fish.	*Closed season.*
Land-locked salmon (the land-locked form of *Salmo salar*)	Oct. 1st to April 30th.
Black bass (*Micropterus salmondes* and *M. dolomieu*)	Jan. 1st to May 30th.
Pike, pickerel, and pike-perch	Jan. 31st to May 1st.
Mascalonge	Last day of Feb. to May 30th.

There is a close season for salmon, *S. salar*, from August 15th to March 1st, but there is no fishing for this fish in the state to tempt an angler. The Hudson, a stocked stream, does not yet produce fish in numbers for fishing purposes.

There are limits to the length of fish which may be legally killed. For salmon it is 18 inches, for black bass 8 inches, except in the St. Lawrence River, where it is 10 inches. On Long Island the close season for trout of all kinds, except lake trout, is from August 31st to March 29th.

In the St. Lawrence River the close season for black bass, mascalonge, pike, pike-perch, and pickerel, is from January 1st to June 9th, and not more than twelve black bass shall be killed or possessed by one person in one day. The penalties for violating the provisions of the close season are from $10 to $100, besides being a misdemeanour which carries a fine with it.

Vermont.

Kind of fish.	*Closed season.*
Trout (*fontinalis*), lake trout (*namaycush*), and land-locked salmon	Sept. 1st to May 1st.
Black bass	Jan. 1st to June 15th.

Fish can only be taken by angling, and angling is defined to mean "not exceeding two rods or lines, with hooks attached, held in the hand."

New Hampshire.

Brook trout or lake trout	Sept. 18th to May 1st.
Land-locked salmon	Sept. 30th to Apr. 15th.
Black bass	April 30th to June 15th.
Mascalonge	April and May.

Not more than 10 lbs. of brook trout can be taken in one day by one person. Angling only permitted. Fish commissioners of the state have power to close any waters in the state for a term of years by publishing notice.

Maine.

Salmon (*Salar*)	Sept. 15th to April 1st.

No salmon to be taken on Saturday and Sunday.

Brook trout, lake trout, and land-locked salmon	Oct. 1st to May 1st.
Black bass	April 1st to July 1st.

Angling confined to single hook and line or artificial flies. Not more than 50 lbs. of land-locked salmon, lake trout, or brook trout may be transported.

Delaware.

Black bass and trout	Nov. 1st to June 1st.

Connecticut.

Trout	July 1st to April 1st.
Black bass	May and June.

Massachusetts.

Trout of all kinds and land-locked salmon	Sept. 1st to April 1st.
Black bass	Dec. 1st to June 1st.

Michigan.

Trout, grayling, land-locked salmon	Sept. 1st to May 1st.

Colorado.

Trout	Dec. 1st to June 1st.

South Dakota.

Trout	Sept. 1st to May 1st.

Unlawful to export trout.

Pennsylvania.

Kind of Fish.	*Closed season.*
Brook trout	July 15th to April 15th.
Lake trout	Oct., Nov., Dec.
Black bass	Jan. 1st. to May 30th.

Oregon.

Trout	Nov. 1st to April 1st.

Wyoming.

Trout	Oct. 1st to June 1st.

California.

Trout	Nov. 1st to April 1st.

Other states, Florida, Missouri, Louisiana, Kentucky, Nebraska, have no close season for fish, so far as hook and line fishing is concerned. The states I have given cover the lake and wilderness regions of the New England states, the Adirondacks of New York, the Rocky Mountains, and the Pacific coast. In the Eastern and Atlantic states, the "trout" or brook trout is the *fontinalis;* this is also true of the states about the Great Lakes. The Rocky Mountain states furnish the black spotted trout, *Salmo mykiss*, and the Pacific states the rainbow trout, *S. irideus*, there called mountain trout.

A. NELSON CHENEY.

FENCING—To hold a Foil—The thumb must be flat on the hilt (convex part) the forefinger grasping the under part and the two sides, and the other fingers lying flat along the left side. The four fingers should touch each other, and a small place should be left between the third phalanx of the little finger and the under part of the hilt. Lightness in the grip, holding the foil mostly with the thumb and forefinger, makes finger play possible.

First Position—The first position can be taken in two different ways:—

(A) Place both feet at right angles, both heels touching each other, the right foot in front and pointing towards the opponent,—the legs straight, the body upright without stiffness, and facing the opponent at three-quarters; both arms down, falling naturally along both sides of the body, the point of the foil in front touching or nearly touching the ground.

(B) The feet, the body, and left arm the same as above, the right hand holding the foil at the height of the head, knuckles upwards, and slightly to the right, the arm straight.

The first position (A) ought to be taken always by beginners before assuming the guard, and in assaults made in private. The first position (B) is used in public assaults and always when beginning an assault.

Second Position or Guard—When in the first position (A) with the right hand low, the second position is taken thus:—

Place the right foot at about two soles' length in front of the left heel, raise the left hand until on a level with the head, the arm half extended, rather backwards; raise the right hand until nearly at the height of the right breast, bending the arm, and keeping the elbow near the body, but not touching it, and the point of the foil at about the same height as the eye. Bend both knees, keeping the weight of the body well

divided between the two legs. Keep the body upright, shoulders down without leaning either backwards or forwards, and always facing the opponent at three-quarters. The distance between both heels may vary according to the height of the fencer; when the legs are properly bent, the right knee must be perpendicular to the instep.

The second position, or guard, may be taken backwards, by placing the left foot behind, at about two soles' length from the right, the rest of the movement the same as above.

When in the first position (B) with the right hand high, to take the second position, lower the right hand, knuckles downwards, place it by the side of the left hip, and let the left hand take

FIG. 1.—THE GUARD.

hold of the blade lightly as if it was in its sheath; raise both hands together to a level with the head, taking care to round the movement; let go the blade with the left hand, and place the left arm, half extended, rather backwards, keeping the hand at the same height. Place the right hand in front, slightly lower than the right breast, the arm bent, the elbow near the body, but not touching it, the point of the foil at about the same height as the eye. Place the right foot at about two soles' length in front of the left heel, and bend both knees as above.

Third Position or Lunge—From the second position, or guard, stretch out the right arm, without any jerk, on a level with the shoulder, finger nails turned upwards: advance the right foot about a sole and a half length, slightly raising the toes and allowing the heel almost to brush the ground; stretch the left leg and straighten the left knee, press in the loins and left hip, and lower the left hand towards the left thigh at a few inches above it. The right knee should be perpendicular to the instep, and the left foot kept flat on the ground. Great care must be taken not to drop forward, and the body should not be kept too upright, but in a slanting position, allowing a sufficiently long reach without compromising the retreat.

Observations on the Guard—Quickness and suddenness in the attack, readiness and firmness in the defence, and easiness in the retreat, depend on a good guard, therefore great care should be taken in assuming that position. Until late years most fencers thought it preferable to have the body well "effaced," *i.e.*, the body sideways, presenting the right side only, hoping to be exposed as little as possible to the thrust of the antagonist. This is an error which has been almost completely abandoned in France in the last few years.[1] The *Théorie pratique de*

[1] There are two *schools* or *methods* of fencing: the French and the Italian. In the latter they have still kept the effaced position in the guard and lunge. The Italian foil is different to the French. There is a small iron bar (called *barrette*) across the handle; the foil is held with the forefinger and the middle finger round the barrette, the third and fourth grasping the handle, and the thumb lying close to the middle finger

l'Escrime and *L'Escrime et le Duel*, published in Paris, the first in 1886, the second in 1891, are mostly the cause of that progress.

The reasons that cause the effaced position to be wrong are the following. In regard to the defence, the effacement of the body makes it extremely difficult to keep a steady balance; it requires a constant muscular effort to turn the left shoulder and hip backwards towards the left. The right arm becomes stiff, and this stops finger play and causes the parries to be slower and wider. In regard to the attack, the effacement of the body, stiffening the right arm, makes its extension slower. The hip, being turned backwards, makes the left knee also turn backwards, and places it perpendicularly over the left toes; the left leg and thigh then are not in a favourable position to give quickness to the lunge; and the body is so placed that the action of the loins does not come into play. On guard, the left hand should always be placed as indicated, the left arm being a very useful counterbalance to the right.

It is most important that the body should be upright and its weight equally shared by both legs. If the fencer leans forward, he shortens his reach and exposes himself, and the weight of the body, bearing mostly on the right leg, prevents the right foot from moving properly forward in the lunge. If, on the other hand, the weight of the body is thrown on the left leg, the lunge becomes slow, as it cannot be done without a *jump*, or without a movement forward of the body before making use of the extension of the left leg.

FIG. 2.—THE LUNGE.

Observations on the Lunge—A fencer must always bear in mind that quickness in the attack depends mostly on a supple and quick extension of the arm. The extension of the left leg must not begin the motion: the hand must start first, the right foot next, and the left leg must then push the body forward. These three parts of the lunge must follow each other so closely that they seem to be a single movement. To have a long reach, the body must certainly be *slanted forward*, but it is most important that it should not *drop forward*. The left hip must be well pressed in, and the

nail on the handle and barrette. Until about ten years ago, their blade was four or five inches longer than the French, and was heavy and whippy. Some Italian fencers, having been to Paris and having fenced with French fencers, understood that the exaggerated length and weight of their foil were a great disadvantage to them; they gradually shortened their blade, and have now adopted the French blade. They modified their way of fencing, and instead of keeping their arm stretched out on guard they bend it, and have taken most of the French parries, which they could not use before on account of the weight and length of their blades. They have also changed their way of attacking and lunging, *i.e.*, instead of making a sort of half lunge, keeping the body completely upright, always preceded by one or several little jumps forward, they make a longer lunge and slant the body forward, but they have not yet done away entirely with their jumps forward (the French advance one foot after the other, the right foot first; the Italians advance both feet at the same time with a jump). On account of their effaced position and their way of holding their foil or sword, their attacks are not so quick, and they are obliged to move a great deal more for their defence, and they require much more muscular strength.

loins tightened, or else the fencer will lose his balance and find the recovery extremely difficult. Care must be taken not to let the right knee overreach the foot; the knee must be just above the instep.

To Recover or Return on Guard—Just as the left leg pushes the body forward in the lunge, the right leg must, with the help of the loins, push it backwards in the recovery; simultaneously, the left hand must be raised, the right arm and the left leg bent, and the right foot placed at about two soles' length from the left, and the position of the guard assumed.

When the adversary has retired a certain distance to avoid the attack, and has put himself far out of reach, the guard may be regained forwards in the following manner. Keep the right knee bent, bring the left foot to about two soles' length from the right heel, bending the left leg; raise the left hand, bend the right arm and take the position of the guard. When, having attacked without success, the fencer is in danger and wishes to place himself immediately out of reach, he must, with a vigorous effort of the right leg and loins, throw the weight of the body on the left leg, which must be kept almost straight; place the right heel against the left, and assume the guard backwards. Beginners should not make use of these two latter ways of regaining the second position.

When on guard, the first position can be regained forwards by bringing the left foot close to the right, and backwards by placing the right heel near the left.

To Advance—When on guard, advance the right foot first a few inches, and let the left foot follow over an equal space.

To Retire or to Retreat—When on guard, step back a few inches with the left foot first, and bring the right foot the same distance from the left as before. If, for some special reason, it is necessary to get instantly out of reach, throw the weight of the body entirely on the left leg, bring the right foot against the left heel, or, if needed, behind the left foot, without keeping the legs quite so much bent, and fall on guard backwards. This way of retreating must only be used by fencers of some skill, and not by beginners.

The Lines—The space between the right or the left of the blade and the limit of the body on the corresponding side is called the *line*. There are four lines: two high and two low. The two high lines are: the *upper* line on the right of the blade when pointed high, and the *inside* line on the left of the blade when also pointed high. The two low lines are: the *lower* line on the left of the blade when pointed low, and the *outside* line on the right of the blade when also pointed low.[1] A line is either open or closed; it is open when the opponent's point can hit the fencer's body; it is closed when the point cannot touch it. The two high lines cannot be closed at the same time; if the inside line is closed, the upper line is bound to be open, and *vice versa*. The same for the two low lines.

Simple Parries—A *parry* is the action of warding off a thrust of the opponent's foil or sword. A simple parry is a direct parry which meets the opponent's blade in the line in which he thrusts. There are eight simple parries: four for the two high lines, four for the two low ones.

There names are: *Prime*, *Seconde*, *Tierce*, *Quarte*, *Quinte*, *Sixte*, *Septime*[2] and *Octave*.

Prime: The right hand opposite the left shoulder, the thumb turned downwards, the arm half bent, the foil pointed downwards.

Seconde: The hand opposite the right hip (slightly higher), the finger nails turned downwards, the arm straight without stiffness, the point very little lower than the hand, the blade almost horizontal.

Tierce: The hand on the right, the finger nails very slightly turned downwards, the elbow near the body, the point on a level with the eye a little outside the line on the right.

Quarte: The hand to the left, the thumb uppermost, the elbow near the body, the point on a level with the eye and a little to the left.

Quinte: The same as quarte, with the finger nails turned downwards and the point further to the left. The hand may be slightly lower.

Sixte: The same as tierce, with the finger nails turned upwards.

Septime: The hand opposite the right shoulder, the finger nails turned upwards, the arm half extended, elbow down, the blade horizontal, the point opposite the left shoulder. In the position of septime, the wrist must be slightly bent: the upper part convex, the inner part concave.

Octave: The same as seconde, with the finger nails turned upwards.

Theoretically there are eight parries, as described above, to protect four lines, two parries for each line, but this is a useless complication. Practically one parry for each line is sufficient; therefore, following the celebrated French master M. Bertrand's[3] example, we consider that four parries can be abandoned without any disadvantage, and they are the following:—

1. **Prime**, which is a dangerous parry. It

[1] Some masters give the same names to the lines and the parries; for instance, they name the *inside* line *quarte* line or *quinte* line, according to the position of the hand holding the foil, being with the finger nails turned upwards or downwards; and the upper line *tierce* line if the finger nails are turned downwards, or *sixte* line if they are upwards. According to that system there are two names to each line; therefore it complicates a demonstration when taken as a rule. Nevertheless, it may simplify or help an explanation when used exceptionally, and for this reason these expressions will be sometimes found in the course of this article.

[2] Septime has been called *semicircle* or *half-circle* for many years.

[3] M. Bertrand, born in 1797, died in 1876.

is slow and places the hand in such a position that, when deceived, the body is entirely uncovered. Septime protects the same line and is much more convenient. It is a much quicker parry, and the ripostes from it are more easily delivered and more rapid.

2. **Quinte**, which is a heavy and clumsy parry.

3. **Sixte**, because, the hand being turned finger nails upwards, the parry is made with the help of the ends of the fingers, while with tierce, which covers the same line, the parry is made with the help of the thumb, the finger nails being turned slightly downwards.

4. **Octave**, for the same reasons as sixte.

There are two ways of making the same parry: by an opposition, or by a smart or dry beat on the blade.

When the opponent presses on the blade while attacking, trying to force the stroke in notwithstanding the parry, the parry should be made by closing the line, thus pushing the point out of the direction of the body, and this is called "by opposition" (parade d'opposition).

If the blades are not joined in the attack, the opponent not weighing on the blade when the parry is being made, the parry should be, as the French name it, "parade sèche" or "parade detachée," that is, with a dry or smart beat sending the opponent's point out of the line. From this last parry the riposte called "du tac-au-tac" (explained further on) can be made.

In the parries of quarte and tierce, the point must be higher than in the ordinary engagement, so as to take the advantage of the fort of the blade on the feeble. As a rule it should be about on a level with the fencer's eye, and if the opponent weighs on the blade the point should be still higher.

The Engagement—The engagement is the junction of the blades. There are as many engagements as there are parries, and they take the same names, *i.e.*, the engagement in quarte, the engagement in tierce, &c. It may be either with or without opposition. It is with opposition when the opponent's blade cannot reach the body with a straight thrust, that is, when the line in which the blades are joined is closed. It is without opposition when the blades are placed so that the same line is open. The height of the point, when the blades are engaged in quarte or tierce (or sixte), should vary according to the opponent's size; if the antagonist is tall, it should be higher than if he is short. As a rule the point must be placed in the direction of his eyes, more to the left if in quarte, with opposition, or more to the right if in tierce.

FIG. 3.—THE PARRY IN SECONDE.

The Change of Engagement—To change the engagement in the upper lines is to quit an engagement in one high line, passing the point under the opponent's blade, and to take the engagement in the other high line: from quarte to tierce or from tierce to quarte In the changes of engagements from one low line to the other, that is, from septime to seconde, or from seconde to septime, the point must pass over the opponent's blade. Both fencers cannot have the opposition in the engagement, one of the two is fatally uncovered, and it is dangerous to attempt to get the opposition by forcing on the opponent's blade; therefore the changes of engagements are very useful, as they allow one

to take the opposition in the other line without any effort.

Sometimes, when an adversary is preparing an attack, a change of engagement may oblige him to change his mind.

The Double Engagement—The double engagement is composed of two successive changes of engagement, rapidly done, the first very light, simply touching the blade, the second with opposition. It is only used in the high lines. It often allows opposition to be taken without forcing on the blade, and is very useful when advancing, as it renders a stop thrust (coup d'arrêt) very difficult. It may also disturb the adversary's plans. It requires light finger play to be well executed, and it is a very good exercise.

Finger Play (Doigté)—To have a good finger play is to be able to direct the point and move the blade in attacking, in parrying, and in executing all movements in fencing, with only the action of the fingers on the hilt.

The foil must be held mostly with the thumb and forefinger. These must act as a sort of pivot, the thumb giving the direction to the point, the three other fingers holding the hilt very lightly, giving momentary pressures when needed, either to move the blade properly in feints, attacks or ripostes, or to form the parries or "attacks on the blade," or to support any shock on it. It is a great mistake to hold the foil with force, but the fingers must never quit the hilt; they must be in continual contact with it.

When parrying, the hand must be placed as explained for each parry, but when attacking, feinting, or riposting, the hand must be in supination, that is, with the finger nails turned upwards, this position of the hand being much more favourable for finger play; there are but very few exceptions, which will be explained in their proper place.

The great advantage of finger play over arm or wrist work in fencing is that it gives considerably more quickness in the movements of the blade. With it the feints are more effective and the opponent's parries deceived more surely and safely; the parries are more rapid and made with more precision; and if a parry is deceived by the antagonist, a second parry is more easily and quickly done; and ripostes are quicker and neater.

Fig. 4.—The Parry in Tierce.

Simple Attacks—Attacks which are not preceded by a feint are called simple attacks. There are four simple attacks and they can be executed in each line. Their names are: the straight thrust (coup droit), the disengagement, the cut-over (coupé), and the counter-disengagement (contre-dégagement).

A fencer must bear in mind that as the thrus is delivered with the foil or sword, the hand holding that weapon must move first in every attack, however quick the stroke may be. When a very good fencer makes a very quick straight

thrust or a disengagement, the hand, foot and body all seem to move together at the same time, but, in fact, the hand begins the motion.

The Straight Thrust—This is the most simple of all the attacks. To make a straight thrust, straighten the arm, directing the point to the adversary's body in the line of engagement, and lunge. The direction must be given to the point with a pressure of the thumb while extending the arm. Some fencers direct the point first, placing the blade horizontally, and then straighten the arm; this is a mistake, because it involves loss of time, and the success of a straight thrust depends on quickness.

When disengaging from the engagement in quarte into the upper line, pass the point under the antagonist's hand while straightening the arm, and turn the hand knuckles up, keeping it opposite the right shoulder, and thrust in tierce. The turning of the hand in supination, while disengaging, helps finger play considerably. The same for disengaging from tierce into the inside (or quarte) line, only with the hand slightly to the left.

It is a mistake to try, as some fencers do, to pass the point as close as possible to the opponent's blade, because then the straightening of the arm can only take place when the point has passed into the opposite line; this makes

FIG. 5.—THE PARRY IN QUARTE.

The straight thrust can be made in each line with the fingers upwards or downwards, but a good direction is much more easily given to the point with the hand in supination. When engaged in tierce, if the opponent keeps his point too low, the straight thrust can be made thus: Place the fort of the blade on the feeble part of his, straighten the arm, and lunge, slightly forcing in the line, with the hand high, keeping opposition to the right.

The Disengagement (or **Disengage**)—To disengage is to quit the line in which the blades are placed and to thrust in another. In the high lines the disengage is made by passing the point under the opponent's hand; in the low lines, by passing it over the adversary's wrist.

two movements of one; it is absolutely necessary to extend the arm while disengaging and to pass the point round the antagonist's hand very closely, and, when disengaging into tierce, round the arm if possible.

To disengage from a high line into a low line, drop the point into the low line, on the corresponding side, while extending the arm, and lunge, and *vice versa* to disengage from a low line into a high line.

The Cut-over (**Coupé**)—When engaged in quarte, to cut-over into the upper line, raise the point by a movement of the thumb and forefinger, loosening the three other fingers, pass the blade over the adversary's, lower the point by a pressure of the last three fingers while straightening the arm, and lunge. The

same when engaged in tierce to cut-over into quarte. The coupés are not used in the low lines.

The Counter-Disengagement — The counter-disengagement eludes a change of engagement or double engagement; or, when preceded by a feint, it deceives a parry.

The counter-disengagement is very much like a disengagement in appearance, but as it cannot be done if the opponent does not move his blade first, *ipso facto* it is quite different. The disengage goes from one line to another; the counter-disengage comes back into the same line.

When engaged in quarte, to counter-disengage, thus. From the engagement in tierce, to avoid the change of engagement, the instant the adversary's blade quits the engagement, drop the point into the lower line, and lunge. The same from the engagement in quarte, and thrust in the outside line.

In these two cases, although the thrust is not delivered in the line of engagement, the stroke is still called a counter-disengagement, and must not be mistaken for a disengage, as it is still made in the reverse way, following the opponent's blade.

How to protect oneself against the above Attacks with Simple Parries—

Fig. 6.—The Parry in Septime.

the instant the adversary quits the blade to change the engagement, let the point follow his blade, passing under his hand with a pressure of the thumb and forefinger, and lunge, thrusting in the inside line. The extension of the arm must take place while the point is passing under the hand. From the engagement in tierce, the counter-disengagement is the same, but in the reverse way.

The counter-disengage on a double engagement must take place on the second change, *i.e.*, when engaged in quarte, let the blade be touched by the other in tierce and avoid the second change by a counter-disengage in tierce. When in tierce, let the blade be touched in quarte and counter-disengage in quarte. Sometimes the counter-disengage may be abridged

Against a straight thrust that does not quit the blade, in whatever line the engagement may be, take the opposition. For instance, if engaged in quarte with the line open, and the adversary attacks with a straight thrust without quitting blades, raise the point slightly so as to take advantage of the fort of the blade on the feeble, and send the opponent's point out of the direction of the body by closing the line with a pressure of the fingers. The same in the other lines. Against a straight thrust with the blades not engaged, close the line with a smart beat, the fort of the blade on the feeble.

Against a disengage or a cut-over into the inside line, parry quarte, or septime (this last parry protecting the inside line as well as the lower line). Against a disengage or cut-over

into the upper line, parry tierce. Against a disengage into the lower line, parry septime; in the outside line, parry seconde.

Against a counter-disengage from the engagement in quarte into the inside line, parry quarte after the change of engagement: from the engagement of tierce into the upper line, parry tierce after the change of engagement. If the counter-disengagement is abridged and the thrust delivered in the outside line, parry seconde; in the lower line, parry septime.

Feints—A feint is a sham attack, or, rather, the threatening of an attack without lunging. Its object is to mislead the opponent, making him believe in a true attack, inducing him to form a parry which will be eluded by avoiding his blade, and thrusting in an open line. The feint takes the name of the simple attack it simulates.

Attacks made with one or more feints are called compound or composed attacks. Feints should be made with finger play and the extension of the arm, but great care must be taken not to straighten the arm with stiffness and not to move the shoulder forward, because then the finger play would become impossible. There must be no jerk in the extension of the arm.

When making a compound attack, the lunge must take place with the last movement. When making an attack with an advance, composed of one feint and the thrust, the step must be made rapidly with the feint and the lunge with the finale. When making an attack with an advance, composed of more than one feint, the step must be made with the first feint and the lunge with the finish; but as there should be no pause between the step and the lunge, their quickness must be moderated so as to accord with the movements of the blade, the step beginning with the first feint, and the lunge finishing with the finale.

When making composed attacks, it is most important to regulate one's speed by that of the opponent. Indeed, although a composed attack may be made with good judgment and well combined, if the feints are quicker or slower than the parries they are intended to deceive, the blades catch each other, and the attack cannot succeed.

Judgment is required to deceive parries; it is a mistake to rely on mere chance for the success of an attack; it may sometimes happen to be the right one, but very seldom; and generally causes what are called *parries by contraction*, and ugly fencing.

To foresee the opponent's parries is certainly not easy, but in the course of this article some advice will be given how to acquire judgment.

Some fencers very seldom engage the blades, and with others it is sometimes wiser to avoid joining blades. The reasons for so doing will be explained farther on; for the present it is simply useful to state the fact. In order to be more easily understood, all the attacks that will be described, to deceive parries, will be said to start from an engagement, but in practice, when there is no junction of blades, the same attacks can be made to deceive the same parries.

Counter-Parries — There is no English word equivalent to the French *contre*, but the French word *contre* is generally used with an English orthography and transformed into counter.

Counters are circular parries in which the blade follows that of the opponent, and meets it again where the former engagement was, sending the point out of the direction of the body.

There are as many counters as there are simple parries, and they are called counter-quarte, counter-tierce, &c., according to the engagement from which they are made. A counter can be correct only when the opponent's attack is either a disengagement or a cut-over in the line opposite that of the engagement; *e.g.*, from the engagement in quarte the counter-quarte can only be made against a disengage or a cut-over in the upper line (in tierce or sixte).

When engaged in quarte, to parry counter-quarte, the moment the adversary quits the blade to disengage into the upper line, let your blade follow his, and describe a circle with its point, passing under his hand or blade from left to right, thus bringing the blades in quarte again, and closing the line. The hand must not move while doing this; the thumb and fore-finger must act as a pivot, slightly loosening the three other fingers at the first part of the movement, and tightening them at the finish to raise the point, and give a smart beat with the fort of the blade on the feeble of the adversary's.

The movement is the same against a cut-over.

When engaged in tierce, to parry counter-tierce, the moment the adversary quits the blade to disengage into the inside line, let your blade follow his and describe a circle with your point, passing under the hand from right to left, and close the line in tierce. The principles are the same as for counter-quarte.

The counter-tierce parry is not much used, and we do not recommend it: the parry of septime, as we have described it, is far superior, as it is much quicker (the point describing at least one-third less than a circle) and protects two lines, the lower and the inside lines.

When in seconde to parry counter-seconde, the moment the adversary quits the blade to disengage[1] into the lower line, let your blade follow his and describe a circle with your point, passing it over his hand from right to left, and bring the blades in seconde again, and close the line. Like the counter-quarte, it must be

[1] The disengagements, from one low line to the other, are made by passing the point over the wrist.

made with the forefinger and thumb, and finished with a pressure of all the fingers.

When in septime, to parry counter-septime, the moment the adversary quits the blade to disengage in the inside line, let the blade follow his and describe a circle with your point, passing it over his wrist from left to right, and close the line. The finger play is the same as for the other counters.

When the blades are not engaged, as often occurs, the counters are made in the same manner, and are named according to the line in which they are. For instance, when the point is directed high, and the blades are to the left of each other, that is, in the inside line, if the adversary attacks in the upper line with a simple disengagement or a cut-over, the circular parry is called counter-quarte. If the blades are in the upper line, and the attack made in the inside line, the circular parry is called counter-tierce. The same for the counters in the low lines.

Attacks on the Sword—An attack on the sword is intended to get the opponent's blade out of the way before making an attack at the body, to disarm him, to check his blade in a parry, to prevent him from timing, or to draw an attack.

The attacks on the blade are called: a pressure, a beat, a scrape, a twist disarmament, or a twist-and-thrust (pressions, battement, froissé, croisé, liement).

The *pressure* is the action of pressing on the blade in order to make an opening either for a direct attack or with the intention of deceiving a parry, &c.

The *beat* is a smart tap on the opponent's blade. Light beats are more advisable than heavy ones, but they must be done very suddenly and with finger play only: if they are done otherwise they are very easy to avoid. Their object is to get the opponent's blade slightly out of the way for a direct attack, or, when followed by a simple or compound attack, to check the blade and render the parry more difficult and slower.

The *scrape* (this is the nearest English word for the French *froissé*), is made only in the high lines and mostly in the upper line (tierce). It can only be used when the adversary keeps his point low; it is still more effective when his blade is horizontal and his arm straight.

It is meant either to disarm, or to send the other blade violently out of the line. It jars the hand considerably.

To execute a *scrape*, raise the point so as to place the fort of the blade against the feeble, the three last fingers loosened, and then with a vigorous pressure of the fingers, and especially of the thumb, and a three-quarter extension of the arm, bring the point violently down to the fort, near the hilt, sending the other blade away to the right, if in tierce, or to the left if in quarte. It must be quickly and suddenly done, otherwise it would be very easily deceived. It is intended either to disarm or to open a line widely for a simple attack, or, less violently done, and followed by a composed attack, to deceive a parry.

The *twist disarmament* (*croisé*) is to send the opponent's blade violently from a high line into and out of a low line; like the scrape it can only be effected if the opponent's point is low.

The twist disarmament is executed thus: when engaged in quarte, raise the point so as to bring the fort of the blade against the feeble, loosening the three last fingers, pass the point over the adversary's wrist and violently bring the blades into seconde with a powerful pressure of the thumb and fingers, but mostly of the thumb, and with full extension of the arm: at the end bring the point slightly higher than in the parry of seconde.

When engaged in tierce, raise the point as above, and with the fort against the feeble, bring the blades violently into septime.

If this does not completely disarm a fencer, it will at least loosen his grasp and jar his hand. The first described is the more telling of the two.

The *twist and thrust* is very much like the above, but is not intended to disarm, and for that reason is not so violent. It is an attack at the body as well as at the blade, with a continuous movement bringing the blades from a high line into a low one, or from a low one into a high one with a lunge.

Like the *croisé* it can only be attempted when the opponent keeps his point too low and is more easily executed when his arm is stretched out. It is delivered thus: place the fort of the blade against the feeble, and, if in quarte, pass the point over the opponent's hand and thrust in the outside line with the hand rather low and a strong opposition to the right. This is the stroke called the "Flanconnade."

The twist and thrusts from tierce to the lower line, and from seconde into the inside or quarte line are dangerous, and should not be resorted to as an attack, but may sometimes be used as a riposte.

From septime the twist and thrust is done by passing the point over the opponent's wrist and thrusting in the upper line, with opposition to the right. This is often used as a riposte after the parry of septime.

Attacks on the sword can be used after changes of engagement or double engagements. For instance, if in quarte, the opponent keeping his point too low, and seeming to be ready to straighten his arm with the intention of snatching a hit the moment you move, change the engagement, placing the fort of your blade on the feeble of his, and make a scrape, etc.

How to deceive or avoid Attacks on the Sword.—The pressure, the beat, and the scrape are deceived by disengaging into the other line. The twist disarmament from quarte to seconde is deceived by a disengage into the

upper line. The twist disarmament from tierce to septime is deceived by yielding the blade at the beginning of the movement, and disengaging into the outside line.

The twist and thrust being both an attack on the sword and the body, should not be eluded, as it would occasion a simultaneous hit, but the finale should be parried thus: From the engagement in quarte, yield the blade completely until the point is quite to the left, lower the hand on the right side of the other blade, raising the point, and take the position of quarte with opposition to the left.

From septime: yield the blade at the beginning and parry tierce at the finish.

Principal Attacks to deceive the most Important Parries — When engaged in quarte, if the opponent keeps the inside line open (that is if the straight thrust can be attempted) to deceive the parry of quarte, feint a straight thrust, or make a beat or a pressure, and disengage or cut-over. When in tierce, the parry of tierce is deceived with the same attacks, in the reverse way. The same for septime and seconde, excepting the cut-over, which should not be made in the low lines.

From the Engagement in Quarte—To deceive the parry of seconde: disengage in the upper line.

To deceive the tierce parry:

(1) Feint a disengage in the upper line and a disengage in the inside line. This attack is called *one-two* and can be done also with the feint in the lower line and the finale in the inside line, or with the feint in the upper line and the finale in the outside line.

(2) Change the engagement with a pressure, a beat, or a scrape, and disengage.

To deceive septime: simulate a *one-two* and counter-disengage into the outside line; or beat and counter-disengage.

From the Engagement in Tierce—To deceive the seconde parry: one-two into the upper line, making the feint in the outside line.

To deceive the quarte parry: one-two in the upper line, the feint either in quarte or in outside line. Or change the engagement with a beat, or a pressure, and disengage.

To deceive the parry of septime: feint a disengage in the inside line and counter-disengage into the outside line. This is called a double disengagement, or by abbreviation a double. Or change the engagement with a beat and counter-disengage.

When engaged in quarte, to deceive counter-quarte:

(1) Feint a disengage in the upper line and counter-disengage into the upper line. This is called a double disengagement (or simply *double*) in the upper line.

(2) Feint a disengage in the upper line and counter-disengage into the lower line (double in the lower line). In this last attack the feint must be made with the thumb uppermost and the finale with the finger nails turned downwards and the hand low.

When engaged in tierce to deceive counter tierce: double into the inside line.

In the low lines the counter parries are deceived by double disengagements also.

There are several other ways of deceiving counter-parries, specially from the engagement in quarte, but they are a useless complication.

From quarte, to deceive the opposite counter (in tierce): simulate a one-two and counter-disengage, or beat and counter-disengage.

From tierce, to deceive the opposite counter (in quarte): simulate a one-two and counter-disengage in the upper line; or a beat or a scrape and counter-disengage in the upper line. If the parry is made with the hand high, let the finale of the attack be made in the lower line with the finger nails turned downwards, the same as in the double in the lower line to deceive counter quarte.

From quarte to deceive tierce and quarte: feint a disengage in tierce, a disengage in quarte, and disengage and thrust in tierce. This is called *one-two-three*.

From tierce to deceive quarte and tierce: reverse the same attack.

Every parry can be deceived, therefore the number of attacks is unlimited. Those above mentioned are the most important ones, and with them a fencer can find the others by himself. To do so he has to add a disengage to the feints he has already made to deceive a supplementary transversal parry, or a counter-disengage to deceive another counter parry. But here *time* and *stop thrusts* may come in to put an end to such protracted attacks.

How to protect Oneself against the Attacks above-mentioned — The feint straight thrust and disengage, the beat or pressure and disengage are parried in the same manner as the simple disengage, either by a simple parry or by a counter.

From tierce engagement the scrape and disengage is parried by quarte.

From quarte, against a one-two into quarte, parry tierce and quarte, or quarte only at the finale, or parry septime, or, if the feint is made in the upper line, parry seconde at once so as to meet the blade before it comes back in quarte.

Against a change with a pressure, a beat, or a scrape and disengage: parry quarte at the finale, or parry seconde.

Against a one-two and counter-disengage or a beat and counter-disengage: parry septime and seconde, or parry septime and counter-septime.

From the tierce engagement, against a one-two, or against a change with a beat or a pressure and disengage into tierce: parry quarte and tierce, or tierce at the finale, or the reverse counter (quarte and counter-quarte in one movement).

From tierce against a double, or a change with a beat and counter-disengage: parry septime and seconde, or septime and counter-septime.

From the engagement in quarte, against a double in the upper line: parry counter-quarte and tierce, or parry counter-quarte twice, which is called double counter-quarte. Against a double in the lower line: parry counter-quarte and seconde, or counter-quarte and septime, but then the point must only go half way in the counter-quarte in order to meet in time the other blade with septime.

disengage to the upper line, or a beat or a scrape and counter-disengage to the upper line: parry the opposite counter and tierce; or the double reverse counter. If these attacks are directed in the lower line: parry the opposite counter and seconde, or parry the reverse counter and septime, the point stopping half way in the reverse counter to be able to meet the other blade in time with septime.

Every attack can be parried, just as every parry can be deceived. If the parries above mentioned are deceived, add a supplementary one, and so on until the opponent's blade is

FIG. 7.—DIRECT RIPOSTE AFTER A PARRY IN QUARTE.

When engaged in quarte, against one-two-three in the upper line: parry tierce and the reverse counter (in quarte); or better, parry simply tierce at the finale or counter-quarte; but for this good judgment is required, as the attack must have been foreseen.

When engaged in tierce, against one-two-three in the inside line: parry quarte and septime or parry quarte and seconde, or parry septime at the finale only.

When in quarte, against a one-two counter-disengage to the inside line, or beat and counter-disengage into the inside line: parry the opposite counter and quarte, or the opposite counter and septime.

When in tierce, against a one-two counter-

met. But the best method is not to follow the antagonist's blade in all his feints, but wait for the finale.

The Riposte—The riposte is a thrust delivered after a parry.[1]

The neatness of a riposte depends on the precision and smartness of the parry. Contraction of the muscles and too much force in the parry renders the riposte slow and heavy; but if the parry is well made, with the fingers, the riposte is the safest stroke.

Immediately after the parry, the fingers must

[1] A thrust or prod is not called ripo-te when delivered after the parry has been eluded; it is only so named when the parry has been effective and has cast off the antagonist's point.

be slightly loosened and the direction must be given to the point by a pressure of the thumb. The arm must not be straightened with a jerk, but more or less extended with suppleness according to distance.

Ripostes are of three kinds: direct, with a change of line or feints, and with a pause (in French—*à temps perdu*).

The direct riposte is delivered in the same line in which the parry has been effected.

There are two kinds of direct ripostes: the riposte quitting the blade, which is the best and the quickest; and the riposte by opposition or without quitting the blade (*riposte d'opposition*).

The direct riposte should reach the opponent while he is on the lunge; for that reason the right foot must not move forward, and sometimes the antagonist is so close that a complete extension of the arm is not needed.

After the parry in quarte [1], to deliver the direct riposte quitting blades (this riposte is called in French with happy onomatopœia, *riposte du tac-au-tac*): immediately after the click of the parry, bring the point down, in the direction of the opponent's body, with a pressure of the thumb on the hilt, turning the finger nails upwards, and straighten the arm more or less according to the distance and size of the fencer. In this riposte the point must describe a slight curve on the right so as to avoid the antagonist's hand. It is a great mistake to raise the hand higher than the shoulder while riposting, as some masters teach it, because the opponent being on the lunge, has his body low and slanted, and the raising of the hand makes the fencer who is riposting miss his aim. After the parry in quarte, if the adversary presses on the blade, so that the blades cannot quit each other lower the point and turn the finger nails upwards simultaneously, and advance the hand slightly higher than in the previous riposte, keeping a good opposition to the left.

After the parry in tierce, to deliver the direct riposte quitting blades: lower the point with a pressure of the thumb, turning the finger nails upwards, and extend the arm. In this riposte the hand must be slightly higher than in the riposte after quarte, as the stroke passes over the antagonist's arm or blade. The riposte, without quitting blades (by opposition), is made in the same manner, only with a stronger opposition to the right.

After the parry in seconde, to give the direct riposte, quitting blades or by opposition: loosen the three last fingers so as to bring the point into the direction of the opponent's body as if your blade sprang off his, keeping a strong opposition to the right.

After the parry in septime, to riposte in the direct line: drop the point immediately, as if your blade sprang off the other (loosening the fingers slightly) in order to clear the opponent's hand, and direct the point to his body, with a delicate pressure of all the fingers bringing the blade horizontal; if necessary, the hand must be slightly lowered, but never lower than the point.

How to Protect Oneself against the above Ripostes—When parrying a riposte the attacker should recover the guard. Unless he intends to give a counter-riposte (which will be described further on), to do this in most cases he may remain on the lunge, simply drawing his body slightly backward (*retraite de corps*) to help the parry.

Against the direct riposte, quitting blades after quarte: when remaining on the lunge, parry quarte with the hand higher than when on guard, the point very high, the blade almost vertical, and the arm half bent. When recovering the guard, parry quarte in the usual manner.

Against the riposte, without quitting blades after quarte: if the adversary presses heavily on the blade, trying to force the riposte in, notwithstanding the parry, raise the point quickly, the blade vertical, and bring the hand nearer to the body, bending the arm, and parry quarte with the fort of the blade against the feeble of his. Sometimes, when a fencer has parried with much force and weighs heavily on the blade when riposting, the best method is to yield completely, so as to give no support whatever to his blade: then the riposte is sure to miss the body, passing away from it.

Against the direct riposte after tierce: raise the point, bring the hand near the shoulder, bending the arm, and parry tierce; or parry the reverse counter in quarte while recovering. The last is rather slow, and with a quick fencer may not meet the blade in time to parry.

Against the direct riposte after seconde: yield the point completely to the left, lower the hand on the right side of the opponent's blade, raising the point, and take the position of quarte with opposition to the left. This parry is the same as the one against the twist and thrust (*flanconnade*) from the engagement in quarte.

Against the direct riposte from septime: parry septime or seconde while recovering, or parry quarte with the hand rather lower than in the usual quarte parry.

Ripostes changing Lines or with Feints, and how to Protect Oneself against them—These ripostes are used to elude or deceive one or more parries; judgment is required to make them with success, because the fencer must foresee the parry his antagonist intends making.

Ripostes changing lines or with feints are very numerous, but the principal ones are: with a disengage, a cut-over, a twist-and-thrust, a one-two, a cut-over and disengage or a double. There are as many composed ripostes as there

[1] When parrying quarte or tierce, as has been said before, the point must be on a level with the eye and sometimes still higher.

are composed attacks, but those above named are the only practical ones, the others being dangerous. When delivering a riposte with a feint, the arm must not be extended with the feint, as when attacking, because the opponent is on the lunge and therefore very close, and it would be impossible to pass the point properly under or over his hand. Sometimes, when the attacker recovers to make his parry, a half lunge is necessary, with the finale of the riposte, to be able to reach him.

After the parry in quarte: to deceive quarte made with the hand high, riposte with a disengage into the lower line, the finger-nails turned upwards, without raising the hand at all. This riposte is very much like the direct riposte quitting blades and is almost as rapid.

Against this riposte: parry septime or seconde, or to prevent it from being made, parry quarte with the hand lower.

To deceive the parry in quarte, made with the hand neither high nor low, disengage into the upper line. This requires good finger play, and must be done in the following manner: immediately after the parry, loosen the fingers (but keep them touching the hilt), and turn the finger-nails upwards. While this is being done, the point must pass under the opponent's hand or forearm. Then raise the point into the upper line with a light pressure of all the fingers, the upper part of the wrist slightly convexed.

While passing the point from quarte to the upper line, great care must be taken not to raise or advance the hand, and the arm must be extended only when the point is in the upper line, and opposition taken on the right.

To elude quarte made with the hand very low, riposte with a cut-over thus. Raise the point on the left, the hand slightly backwards towards the left breast, loosening the three last fingers so as to be able to pass your blade over the antagonist's point. Then lower your point into the upper line with a pressure of all the fingers, mostly of the thumb, finger-nails turned upwards.

Against ripostes with a disengage or a cut-over into the upper line: parry quarte and tierce, or parry counter-quarte, or, if the riposte has been foreseen, parry simply tierce.

To deceive septime quickly done, riposte with a counter-disengage.

Against this riposte, parry septime and seconde.

When the opponent takes a marked opposition to his left while attacking, or when, immediately the parry in quarte is made, he presses strongly on your blade to avoid a direct riposte, the riposte with a twist and thrust can be successfully made. But while delivering this riposte the hand must be kept on the left, and not on the right as when attacking, for the following reason. When attacking with a twist and thrust the opponent's point is in front of you, and it is necessary to push it away with an opposition to the right so as not to lunge against it. When riposting with a twist and thrust, the opponent is on the lunge and his point has been warded off to the left by the parry in quarte, therefore the opposition to the right would bring the point on the fencer's body.

Against this riposte yield the blade, turn the finger nails downwards, and take opposition in seconde.

To deceive tierce, riposte with a one-two, taking care not to move the hand forward or backwards with the feint.

Against this riposte, parry quarte on the finale. After the parry in tierce, to deceive tierce, riposte with a disengagement either into the inside or quarte line, or into the outside line. The latter is very successful against fencers who try to avoid the direct riposte by turning their body sideways and stooping forwards. It must then be directed at the ribs behind the elbow, but close to it, with the hand placed rather low and to the left, with the thumb uppermost.

Against the riposte with a disengage into the inside line, parry quarte; into the outside line, parry seconde or septime.

To deceive quarte or seconde, riposte with a one-two.

Against this riposte, parry quarte and tierce, or tierce only on the finale or the opposite counter.

After the parry in seconde, to deceive the quarte parry (as described against the direct riposte in seconde), riposte with a disengage into tierce line, turning the finger nails upwards: for this disengagement, the movement of the point must be a little wider, in order to pass round the opponent's arm without drawing your hand back. Against this riposte parry tierce.

After the Parry in Septime—When the opponent has attacked with his hand rather low, riposte with a twist and thrust, named in French *septime enveloppée*. To deliver this riposte, after the parry in septime, pass the point over the opponent's arm, without quitting blades into the upper line, keeping the hand high and on the right, finger nails turned upwards. It is a very telling riposte.

Against this riposte, raise the point very high, bend the arm, bringing the hand towards the right shoulder, and parry tierce.

To deceive the parry in quarte, riposte with a feint in the lower line and disengage into the upper line.

Against this riposte, parry quarte and tierce, or simply tierce on the finale.

To deceive the parry in septime, feint in the lower line and counter-disengage. This resembles a double disengagement.

Ripostes with a Pause—These ripostes are named in French "*ripostes à temps perdu*": they are preceded by a pause, quitting blades.

giving time to the opponent to begin a parry, with the intention of eluding it. Or, if the attacker has stooped forward so much that there is no place to hit with a sudden riposte, the pause enables a fencer to wait for the opponent to begin a retreat, or any other movement affording an opportunity for a riposte. If the parry made is right, the pause enables a fencer to regulate his own speed by his opponent's quickness. If the parry has not been made neatly enough to permit a rapid riposte, the pause allows the riposte to be made with precision. All the ripostes can be made with a pause, except those by opposition or with a twist and thrust.

A fencer must be very cautious when using ripostes with a pause, because they may draw *the remise*.

Counter Ripostes—When after having delivered an attack, which has been parried, a fencer has parried the riposte and thrusts again, this last thrust is called a *counter-riposte*.

All the ripostes named above can be made as counter-ripostes. When the first riposte has been parried while remaining on the lunge, the *counter-riposte* must be delivered still remaining on the lunge.

When the riposte has been parried with a recovery, the counter-riposte must be given with a second lunge.

If the opponent has retreated while parrying and is out of reach, recover the guard forwards, parry the riposte, and lunge again with the counter-riposte.

False Attacks—A false attack is an attack made with a half-lunge, and not intended to hit. It is meant to threaten the opponent without the attacker exposing himself, to induce him to believe in a real attack, either to make him parry and riposte, so as to parry his riposte more easily and deliver a counter-riposte, or a remise; or to draw a time-thrust in order to parry it, &c. It may be to make him form instinctive parries with the intention of deceiving them later on, or to try to discover what are his plans and to make him change them, and so on. False attacks are certainly very useful, but a fencer should not make use of them too often, because then they would lose their effect entirely and perhaps turn against him.

Attacks on Preparations—Some fencers are placed on guard so that they cannot attack without making some preparatory movement. They bend their legs more, bring their body forwards, or lengthen their foil by holding it by the pommel, &c. If an attack is suddenly made at this moment there are many chances for it to succeed, and then it is called an attack *on preparation*.

Renewed Attacks (*Reprises d'Attaque*)—A renewed attack is an attack delivered immediately after a phrase: for example, if after a succession of thrusts, attacks, ripostes, &c., which have all been parried or avoided, both fencers have regained the guard without having been hit, and one of the two immediately makes an attack, it is called a *renewed attack*.

The *reprise d'attaque* may be either simple or composed, and very often succeeds. It requires good execution, and firmness on the legs.

Stop Thrusts (*Coups d'Arrêt*)—A stop thrust is an attack made boldly with a full lunge as soon as the opponent moves forward to attack with an advance, stopping him before he can deliver his thrust. The least hesitation or preparation when executing a stop thrust would prevent it from succeeding, and occasion a most dangerous simultaneous hit. It is very useful against fencers who attack with a rush.

Time Thrusts—A time thrust is almost a parry and riposte undivided. It is a thrust delivered with opposition on a composed attack, barring or closing the line in which this composed attack is intended to finish.

Time thrusts require great knowledge in fencing, good judgment, and good execution. To make a time thrust, a fencer must have forecast the opponent's composed attack.

When engaged in quarte, to deliver the time thrust on a one-two: the instant the adversary quits the blade, making his feint in the upper line, drop your point in the outside line, as if making a counter-disengage, and thrust with a strong opposition to the right.

When in tierce, to deliver the time thrust on a one-two in the upper line: the instant the opponent quits the blade, thrust straight, keeping opposition to the right.

When in tierce, to deliver the time thrust on a double in the upper line: counter disengage with opposition to the right, closing the upper line.

When in tierce, to deliver the time thrust on a double: drop your point, as if beginning a parry in septime, and thrust in the outside line with opposition to the right and the hand low. This opposition to the right, closing the outside line, prevents the opponent's blade from passing into the inside line.

For every time thrust, except for the one on a one-two, a half lunge is necessary.

The opposition must always be taken to the right in time thrusts: *i.e.* in the outside line against composed attacks ending in the inside (quarte) line or outside (seconde or octave) line, and in the upper line against composed attacks ending in that line.

A fencer must be very cautious with time thrusts, and should not try them too often.

Parries against Time Thrusts—If you have forecast a time thrust, the way to parry it is the following: when making a composed attack, in the inside or outside line, transform the finale of the attack into seconde. When making a composed attack in the upper line, transform the finale into septime rather high.

Example: Being engaged in quarte, and having forecast a time on one-two: feint a disengage in the upper, half extending the arm, and instead of disengaging back into quarte, parry seconde.

The Remise—The remise is a thrust made on a riposte. It is somewhat like a time thrust made on a riposte, changing line or composed, without recovering.

Example: If the opponent has parried your attack in quarte and ripostes with a disengage in the upper line, the remise consists in thrusting again in the same line with opposition to the right, intercepting the upper line.

The remise can also be made on ripostes with a pause, during the pause, and must be delivered the instant the opponent quits the blade.

The remise is also a very good stroke against fencers who draw their hand back when riposting.

When the riposte hits, the remise is wrong; it is wrong even when the riposte misses the body from want of skill.

The Assault—The assault is a sham fight, It is the application of what has been described above and learnt with a master; it is impossible to learn fencing by one's self only with the help of a book. A master is required, and it is with his leave and with him that the first assaults must be made. The master must then moderate his quickness and not abuse his skill; he must allow the pupil to succeed with many of his strokes, and help him in every way.

Great care must be taken to follow the right principles, especially when beginning, because bad habits are very quickly acquired, and it is very hard to get rid of them. A fencer must always continue taking lessons, for that is the only way to improve. He could no more neglect to take lessons than a pianist could abandon practising scales and exercises.

A fencer should not be too anxious to hit his opponent, and should never try to hit anyhow; if a fencer wishes to make continual progress, he must consider a hit he gives as a reward for a stroke well executed and well combined.

The junction of the blades is a great help, it warns you when the opponent begins a movement, &c. If the opponent avoids joining blades, you must then not keep your blade too quiet in front of him, because it would favour his fencing. You must make use of false attacks, feints, &c., to draw an attack or find out his plans. If, on the contrary, the opponent has a heavy hand and weighs on the blade, then avoid joining blades and oppose lightness to his force, so as to give it no support.

One must vary strokes, and change plans, according to the opponent to be dealt with; practice of fencing depends on intellectual as well as on physical qualities, therefore it is not possible to give advice against every method or way of fencing.

We have described the principal movements and explained how to execute them, we have given advice on the most favourable positions; prudence, presence of mind, observation and experience must do the rest.

CAMILLE PREVOST.

FERRETS—Writers of works on natural history and books on the management of ferrets tell us that this animal is a native of Africa, but they are unable to indicate any part of that continent in which it may be found wild. There can be no doubt that the assertion is untenable, and the better opinion is that the ferret is nothing more than a domesticated variety of the polecat, with which it is frequently crossed for the purpose of improving the breed. There are positively no cranial, dental, or other structural characters by which they can be distinguished, and the brown variety of the ferret is so like a polecat that it might well be mistaken for one. Experience, moreover, has proved that they breed freely with one another.

Appearance and Weight—The appearance of the ferret is too well known to require any detailed description, and a cross-bred animal between a female brown ferret and a male wild polecat so closely resembles the latter as to be almost indistinguishable. With most wild animals the result of domestication is to increase their size and weight. With the ferret it is otherwise. The average weight of a male polecat is $2\frac{3}{4}$ lbs., and of a female $1\frac{3}{4}$ lbs.; no such weights have ever been recorded for ferrets. The reason for this, no doubt, is to be found in the different conditions of existence to which the two animals are subjected; confinement, want of fresh air, insufficient exercise, and want of warm animal food operate in the case of the ferret to produce an undersized, weakly, and spiritless progeny.

Treatment—The more the treatment of ferrets approximates to the natural conditions of life, the hardier and better they will be, and this is the secret of success in their management. Instead of keeping them in an outhouse in a small box with a bedding of musty straw, saturated with wet and dirt (so productive of "footrot," "sweat," and other diseases), with a small saucer of sour milk and a piece of tainted meat, on which to live or starve, they should be kept, at all events for the greater part of the year, as much as possible in the open air.

Ferret Courts—A writer who has been most successful in keeping ferrets in good health and working condition, thus describes his mode of treatment:—An enclosure is made with planks sufficiently high to restrain the ferrets, and sufficiently low to be stepped over by the owner. In these are put some well made, warmly constructed hutches, so placed as to be off the damp ground, and with small openings for the animals to go in and out, so that they

are comfortable and warm during the night. They are thus enabled, during the whole of the summer, to gallop about the enclosure, bask in the sun, and breathe pure air, the result being that they are always lively and vigorous and altogether free from disease.

Another excellent plan has been thus described by R. A. Muntz:—"My court is about 12 ft. by 6 ft. in area, and several inches deep in turf and peat moss, the whole being thoroughly drained by placing tiles across one another so as to leave a passage for the water, which runs off at the lower end. This system allows of the sluicing of the entire court with 'sanitas,' or some other disinfectant. The sleeping hutch consists of a barrel cut in half longitudinally and placed on a plain wooden floor raised from the ground on a layer of bricks. The barrel can be lifted bodily up, and the sleeping place thoroughly cleaned with perfect ease, new bedding of fine deal shavings being substituted for the old."

Ferret Hutches—Where conditions like those above described are unattainable, and space for the accommodation of ferrets is limited, a roomy hutch must be contrived, and one of the most sensibly devised is that described by Capt. Darwin in his *Game-Preserver's Manual*. This hutch is made as follows:—The full inside length is 4 ft., the width 18 in., and the depth 22 in. The first partition is put in at 18 in. from the end, the second 18 in. also, thus leaving the third 12 in. The box itself is made of deal, $\frac{7}{8}$ in. thick; the partitions are $\frac{1}{2}$ in. thick, and slide down into their places between thin strips of wood. About 5 in. from the bottom of each, a round hole is cut, about 3 in. in diameter, to allow of the ferrets passing through, and each hole has a door working on a screw, with a piece of iron wire $\frac{1}{4}$ in. thick attached. These wires appear through the sides of the box in front, and are finished off with a ring to lay hold off. In the large division at the end of the box is a tray made of wood and lined with lead. The sides are 5 in. high, and the tray has two handles with which to lift it in and out. Each compartment has a separate coil. The two end lids, and also the sides of the compartments which they cover, are bored in a good many places with holes about $\frac{3}{4}$ in. in diameter; the centre compartment with four holes only, which must be in the lid and not in the sides. The tray must have about $\frac{1}{2}$ in. deep of dry sand or sawdust in it, which should be changed every day, and the tray washed out. This compartment is for the ferrets to retire to for a necessary purpose. The centre is for their sleeping place, and it should be filled three parts full of clean straw, and not be changed unless required. The third compartment is for a feeding place. The use of the separated lids and wires will be obvious. By drawing out the particular wire required, the ferrets can be confined in their sleeping place when it is necessary to clean or feed them.

Food—The staple food of ferrets should be bread and milk, or porridge, not too liquid, and occasionally fresh meat in the shape of small birds, mice, young rats, or a piece of freshly killed and warm rabbit. This should be tied by a bit of string to a staple, in order to prevent the ferrets from dragging it into their sleeping place and thus soiling their bedding.

They should never be fed in the morning of the day they are to be used, but on being brought home should have a good supper as soon as possible, and allowed to go to sleep.

Transport—The mode of carrying ferrets about is almost as important as the method of housing them. Nothing can be more objectionable than the time-honoured bag which most keepers and warreners use to save themselves trouble. Carried in this, a ferret is never at rest, and is so cramped and worried as to lose half his energy for work. Should the bag get wet, as is often the case, either from a downpour of rain or from being laid down on wet grass, the ferret is made thoroughly miserable, and will take an early opportunity of "laying up" in the first comfortable burrow it enters.

Breeding—Ferrets are often kept and bred under conditions which are entirely opposed to sanitary laws, with the result that they not only become weakly and diseased, but produce young which in course of time are practically worthless. It is of the utmost importance, therefore, to select healthy stock in the first instance, and to maintain them in a healthy condition as above indicated.

The tyro who, for want of experience, is no judge of "points," may be satisfied to get his stock in the first place from a good breeder. The sexes are distinguished as "hob" or "dog" and "jill," and should be kept apart except at pairing time, when they may run together for a day or two. Ferrets breed twice a year. The period of gestation lasts six weeks: and the young, usually six or seven in number, are born blind and do not open their eyes for a month. Within a week of their being expected, the sleeping compartment of the mother should be closed, after making up a fresh bed, and not be reopened for the next five or six weeks; for, if disturbed before then, the mother will probably destroy them. When they first show themselves outside their sleeping box and begin to feed with the "jill," they will require careful attention, and must be fed three or four times a day.

When about ten weeks old, if looking strong and well, they may be put in another hutch.

Crossing—As above stated, the ferret will breed readily with the wild polecat, and there can be no doubt that a cross with the latter improves the breed materially, for the young are stronger in constitution and work quicker and longer than ordinary ferrets, which after two

years get slow and lazy. The half-bred progeny, while growing up, require more handling and more work than ordinary ferrets do, or they get shy of being picked up.

The second cross is perhaps the best for general purposes, although the first cross produces capital ratworkers round stacks, where agility is indispensable.

Diseases and Remedies—The chief point to be attended to in keeping ferrets is cleanliness. If this be neglected, they become a source of anxiety to their owner and a misery to themselves; for diseases are thereby engendered that are troublesome to get rid of, and become both infectious and contagious.

The disease in ferrets that answers to "distemper" in dogs is known as *sweat*. It is in the nature of a fever, which manifests itself by a dull listless manner, hot nose, high temperature, thirst, running from the nose and eyes, and loss of appetite followed by wasting. The malady being infectious, the animal affected should be isolated at once, and placed in a clean, dry hutch, free from draught. It should then be bathed in lukewarm water tinctured with Condy's fluid, rubbed dry, and replaced in the hutch in a warm bed. If the discharge from nose and eyes has become purulent, this must be carefully removed by washing, and the animal, in regard to diet, should be treated like a human patient in a fever, that is to say, kept for a time upon fresh, warm milk, arrowroot, and broth. As it improves, more solid food may be given, but not too much at a time. A good thing is a freshly killed sparrow or other small bird, given a limb at a time sprinkled with milk of sulphur. For ferrets this is much better than the ordinary sub-limed sulphur, as it is much milder. The dose, to be given once in twenty-four hours, should be as much as will lie on a threepenny bit. This treatment should be continued for a week, then discontinued for three or four days, when another week's treatment will complete the cure. It is not a bad plan, after washing the nose and eyes, to anoint them lightly with vaseline, and a vaseline pill given three times a day has been found to be very efficacious.

Foot-rot is a common complaint with ferrets, and generally arises from their being kept in a dirty condition or in a damp situation. An approved specific is spirit of tar, or creosote. This is a good application, too, when the hair comes off, and should be brushed on lightly with a feather. Perhaps the best treatment for "foot-rot" is to dress the feet once a day with nitrate of mercury ointment, one part ung. hydr. nit. to seven parts lard, without salt. This is better than the mild mercurial ointment, ung. hydr. mitius, which is apt to salivate. The other never does.

Red mange, or eczema, to which ferrets are liable, especially after distemper, is often troublesome to cure. Here, again, the necessity for cleanliness in the hutches is manifest. After washing with lukewarm water and Condy's fluid, and thoroughly drying, the affected parts should be treated with zinc lotion, or, in bad cases, dilute nitrate of silver. Ferrets will often set up an irritation of the skin by biting and scratching themselves to get rid of parasites. The remedy is washing in a solution of quassia wood. It is a good plan to examine the animals from time to time to free them from these insect pests, and to remove the ticks to which they are subject, and which cause them much annoyance.

To get rid of worms, a dose of powdered areca nut, preceded and followed by a dose of castor oil, will be found as efficacious with ferrets as it is with dogs.

While curing ferrets of these complaints, they should always be put in a fresh hutch, and the old one should be well scalded and dried before they are returned to it.

Muzzling and Working—Much difference of opinion prevails on the subject of muzzling and coping, and various patterns of both these methods of restraint have been recommended and advertised. In the opinion of the writer, a ferret should never be muzzled, and it is doubtful whether coping ought not also to be dispensed with, as it clearly should be when hunting rats. A coped ferret cannot kill a rabbit, but will scratch and worry it in the attempt to do so. A rabbit will bolt much sooner from a ferret that is free. If the ferret be worked on a line, care should be taken that there are no roots of trees or rocks underground, or the line will soon get fast and occasion much trouble.

It will not do to handle ferrets while they are quite young, or the old one will very likely destroy them. It will be time enough to handle them when half-grown, and it should then be done boldly, without snatching the hand away, or it will provoke them to bite. As already remarked under the head of "Transport," they should be carried about in a box, and not in a bag, by which means they will get rest and be much more lively. On coming home, they should always have their feet washed. In "entering" young ferrets it is a good plan to let them run with the mother, who will soon initiate them in working a rabbit-burrow. If they are slow to follow her down a hole, she can be used with a line, and pulled back from time to time to entice them forward. It is important to give a young ferret its first chance in a burrow where it will be sure to find a rabbit, as in a short, sandy hole, and to reward it with a kill. Nor should it be worked too long at first, but be allowed an occasional rest. If a rabbit is bolted and shot, it should be pegged down outside the hole, so that the ferret on coming out may find it at once and be rewarded. Should a ferret "lay up," or remain a long time in a hole, another ferret on

a line should be run in, and the truant dug out; hence the desirability of choosing an easy place to begin with when entering young ferrets. A rabbit will sometimes decline to bolt, and will be killed in the burrow; the ferret then will have a gorge and "lay up." In that case the plan is to leave a boy to watch the burrow, or to set a trap just outside and visit it next morning. Strange to say, an old ferret that has been used constantly in the same neighbourhood, will learn to find its home like a dog. Instances of this "homing instinct," as it has been called, have been frequently commented upon and reported.

When rats form the "quarry" instead of rabbits, a ferret should never be muzzled or coped, or it will be unable to defend itself from the savage bites of a cornered rat, and may be badly injured. Should it get bitten, it is as well to attend to the wound as soon as possible, and, after washing in warm water, to dress it with an ointment made of carbolic acid and vaseline. In all cases where it becomes necessary to apply a remedy, the patient should be temporarily isolated from its fellows.

J. E. HARTING.

FIRST AID—There is a measure of risk in most of our national sports, and some of the finest of them largely owe their popularity to the call they make on the pluck which the sportsman is proud to consider his characteristic. Doubtless, to the element of danger is due much of the value of sport in the training and development of the special senses—for hand, eye, and ear soon become quick to detect and to respond to its presence, but it is well that sportsmen should have some knowledge of the treatment of injury.

HÆMORRHAGE is a subject of such importance as to merit first place in the description of accidents. A broken limb can wait a surgeon's coming, but bleeding must be stopped at once.

The blood courses through the body in arteries, veins, and capillaries. The oozing which takes place from scratches, grazes, cuts, and small wounds generally, is from capillary vessels. Such bleeding is easily stopped by first washing the wound with cold water, and then tying it up with a pad and extemporised bandage. If an artery or vein be divided in the wound, the blood will flow more freely. From the artery it will come in a bright red pulsating jet, and from the vein in a steady stream of darker colour.

Serious venous bleeding may be met with in the accidental wounding or rupture of a varicose vein of the leg. The blood may well out with such rapidity as to endanger life. But it is fortunately easily checked if the sufferer be laid on the ground and the bleeding leg raised in the air. This simple manœuvre may alone be sufficient to stop the hæmorrhage. But the spot whence the blood comes should be found, a pad laid on it, and fixed by a couple of turns of a folded handkerchief round the limb.

The coats of the little blood tubes are elastic and will contract, in the case of a small severed artery, sufficiently almost to close the end of the vessel. The blood will then clot inside it and close it entirely. This is inadequate if a big artery be involved. Should the finger be placed on the point whence the blood is coming, a very little pressure will suffice to stop it; or the artery may be compressed at a spot between the wound and the heart, either digitally or by means of a tourniquet. The former method requires anatomical knowledge. The latter can be applied by any one after a little practice.

The simplest and best form of tourniquet consists of a strong elastic band, stretched and wrapped once or twice tightly round the limb above the wound and fastened. Such an arrangement may sometimes be improvised from a brace or belt, if it be sufficiently elastic. Another kind of tourniquet, and one which may be made from materials which are always to hand, is the "Garrot." A handkerchief or neckcloth, preferably of silk, is taken, folded into cravat form, and knotted *quite loosely* round the limb, the knot being on the outer side. A stick is then inserted between the limb and the knot and twisted round. The handkerchief is thus tightened round the limb to any required extent. When sufficient force has been employed to stop the bleeding, the stick is fastened to the limb and prevented from untwisting by a second folded handkerchief. A tourniquet should only be used to stop bleeding after other means have failed. It is often unnecessarily and quite inefficiently applied by amateurs. If too loosely applied, it actually increases bleeding by checking the return of the blood to the heart through the veins without checking the pumping of the blood into the wound from the arteries.

To sum up the treatment:—First, the patient should be laid flat on the ground, because this position is best in case of faintness, and faintness is likely to occur from loss of blood. Then, if the wounded part be a limb, it should be raised as high as possible in the air, for thus the circulation is lessened. The clothing should be cut away from the wound and the latter examined. It may be found full of blood clot which has stopped the bleeding. In this case the clot is by no means to be disturbed, but, if the bleeding be going on briskly, the finger should at once be pressed on the spot whence the blood comes, so as to check it, while pads, bandages, &c., are prepared. To make these, handkerchiefs, towels, or other available materials may be used. A strip from the tail of a shirt makes an excellent bandage in emergency. A good firm pad is now pressed on the wound and kept in position by tight bandages encircling it and the limb. Lastly, if these measures do not suffice to stop the bleeding, a tourniquet must be put on round the limb, between the wound and the trunk. This is best applied outside the clothing, and is tightened just sufficiently to check the blood-flow and no more. It is a dangerous practice to give brandy or other stimulant to a person who is bleeding, for the hæmorrhage is thereby increased. Stimulants in such cases are generally best avoided altogether, and certainly must never be given until the bleeding has been completely stopped.

Bleeding from the Nose—This commonly follows comparatively slight injuries, and may, as a rule, be easily stopped. But nose bleeding coming on after a severe head injury may be of grave indication and demands early medical attention. Position is the most important point in treatment. The patient must on no account be allowed to hang down his head or to blow his nose constantly. He must be seated with his head thrown back, and his clothes loosened round his neck. Ice, or, failing this, a cold wet cloth, should be applied to the bridge of the nose and the back of the neck.

Bleeding from a Scalp Wound—There is hardly any accidental injury more likely to occur than a wound in this situation. Thus a skating tumble often results in a scalp wound of the back of the head, or in a wound of the forehead above the eye. The blood vessels of the scalp are, however, easily closed by pressure against the skull, and all that is necessary to stop the most furious hæmorrhage is to put a thick hard pad on the wound and press it there by a bandage round the head. If the wound is on the top of the head the bandage should go under the chin, and may with advantage be crossed to prevent slipping.

Bleeding from the Hand or Wrist—This is often difficult to stop. If the wound is in the palm, put a tightly rolled handkerchief therein and bandage the

fingers over it. In any case of difficulty, put a pad in the fold of the elbow, and, bending the fore-arm up to the arm, tie it there by an encircling bandage. This serves two purposes: it ensures that the bleeding point is well raised, and by the pressure of the pad, it checks the flow of blood through the main artery of the arm.

WOUNDS—Treatment of wounds may be summed up in two words: "Be clean." Unless the wound is trivial, a surgeon must attend to it as soon as possible, and all that is necessary in the meanwhile is to cleanse it and to keep it from contamination. The commonest wound is a "lacerated" one, with ragged torn edges, and more or less bruising or contusion of the soft tissues surrounding it. More rarely it will be a clean cut "incised" wound, such as is inflicted by a sharp knife. A "punctured" wound, caused by the piercing of a thin narrow weapon, may show but a trifling external opening, but, penetrating deeply, perhaps dangerously, may injure important internal structures or organs.

The treatment is the same in all cases,—wash the wound thoroughly with perfectly clean water, and thus remove as far as possible all grit and particles of foreign matter. If pure water cannot be obtained, it is better not to wash the wound at all, and soiled clothing must never be used for sponging purposes. The edges of the wound should be brought approximately together, and the whole covered with a moist compress made of clean linen wrung out of cold water. Paper, even if it has been written upon, crumpled up and softened by moisture, makes an efficient and fairly clean dressing in the absence of better material. Never use sticking plaster to close a wound bigger than a trifling domestic cut. It merely brings the skin edges together, and, leaving the deeper parts gaping, causes much delay in healing. Curious materials, such as tobacco, salt, cobwebs, onion leaves, and herbs of various sorts, are often applied to wounds, and are popularly supposed to help healing or stop bleeding. Avoid them all. Friar's balsam is also a thing not to be used except for very small cuts.

Dog Bites, and wounds in general inflicted by the teeth of animals, have no special danger if the animal is healthy. The wound is of the lacerated kind, and if washed, kept clean, and treated on the general principles before described, will usually heal readily. Dog bites are often cauterized with the erroneous idea that there is poison in the dog's tooth which must be destroyed. This proceeding is wholly unnecessary and even harmful, since a cauterized wound takes long to heal and leaves much scar. If the animal be mad, special precautions must be taken, and in this case far more than a superficial cauterization of the wound is needful.

In the course of big game shooting abroad very severe injuries are occasionally met with from the teeth of animals. An extensive lacerated wound may be complicated by crunching of the bone, and amputation may be necessary to save life. The first aid treatment should be directed to the arrest of arterial bleeding, which may be considerable.

Snake bites are treated like the bites of rabid animals, but, in addition to local measures, stimulants should be given freely to counteract the depression which invariably follows. [*See* SNAKEBITE, TREATMENT OF.]

Bruises, or "contusions," are best treated by cold water, which should be applied as soon as possible. The effect of cold is to contract the small vessels and so lessen the amount of blood poured out under the skin. This effused blood is the cause not only of the discolouration of a bruise, but of the swelling and pain also. Ice, if it can be obtained, or, failing this, a cold water pad, frequently changed, should be applied to the part. It is still better to mix with the water for damping the pad some spirit, such as eau de Cologne, brandy, or methylated spirit, because by evaporation it increases cold. After a day or so, gentle rubbing may be substituted for the cold water with advantage. The injured part should be kept at rest and raised, in a sling or otherwise, as far as possible.

FRACTURES—Broken bones are unfortunately common enough, and there is no form of accident in which a knowledge of what is best to be done on the spot is more really useful. Fractures are of two principal kinds, "simple" and "compound." A simple fracture is one in which there is no communication between the broken bone ends and the outer air. In a compound fracture, on the other hand, there is a wound of the skin which leads down to the fracture or through which even a jagged end of bone may protrude. This form of injury involves many risks from which a simple fracture is free, and is therefore very much more serious.

A broken limb must always be moved with the greatest caution lest the sharp bone ends be forced through the skin and a simple fracture converted into a compound one. The risk is very great in the case of the shin bone, which lies just under the skin, and a fracture in this situation demands especial care in handling.

To find out whether an injured limb is really broken or not it must be examined for the "signs of fracture." These are (1) shortening; (2) deformity; (3) unnatural mobility of the limb; (4) crepitus, or grating, felt when the broken bone ends are rubbed together. Of these facts the first three are determined by careful comparison of the injured limb with the sound one of the other side. The last one, if obtained, is proof positive of a fracture. But it is not wise to undertake any very elaborate investigations. Much harm may be done by the injudicious handling of a fractured member, and it is best to be content with enough evidence for suspicion of fracture, and then to treat the injury as such.

To begin with, the sufferer must be kept lying down. If he tries to stand on a broken leg, for example, he may do himself great harm. Yet to get him on his feet is generally the first wish of injudicious bystanders. If a doctor can be brought soon, nothing more need be done till he comes than to make the injured person comfortable where he is, resting the limb on some soft material. But very often it is necessary to convey the patient to a distance, and, to do this safely, measures must be taken to fix the limb so that no harm will come to the fracture in transit, and then some comfortable means of carriage must be found.

To fix a broken limb, extempore splints must be applied, and these will have to be manufactured from such materials as are to hand. Splints should always be strong and yet as light as possible, and long enough, whenever it can be managed, to fix the joint above and below the injury as well as the fracture itself. In the country it is seldom difficult to get suitable lengths of wood. Straight ash or hazel branches, bundles of osiers or reeds, strips of bark or pieces of fence wood serve excellently. Or use may be made of walking sticks, hunting crops, fishing rod lengths, or gun barrels, though the latter are rather heavy. In cases of fractured thigh, the entire gun may be utilized, with the stock in the armpit and the limb bandaged to the barrels.

As a general rule, if there is no bleeding, the fracture is a simple one, and the clothing need not be removed. If left, it makes good padding, and helps also to stiffen and support the limb. If, in order to get at the wound of a compound fracture, or for any other reason, the clothing is to be taken off, it must be cut away carefully and never dragged from the limb. When the splints are ready, they must be arranged round the injured part in such position as will give the greatest support to the broken bones, going beyond the joint above and below the fracture. Sufficient padding of soft material, such as hay or clothing, should be inserted under the splints to keep any painful pressure from the point of injury. Then, while an assistant pulls gently on the injured member below the fracture, pulling always in the direction of the limb, the splints must be rapidly fixed. Straps, borrowed from stirrups or skates, are useful for this purpose, or simple cravat bandages may be tied firmly

round. Finally, in the case of the leg, it should be bandaged to its sound fellow, which thus assists in its support. Before the patient is moved it must be seen that the fracture is really efficiently fixed, and that the splints cause no unnecessary discomfort from pressure.

If the arm be the broken part, all that is now necessary is to put it in a sling, and the patient may safely get on his legs again. But if the leg be injured a safe means of transport must be devised. This question will be considered later, for it equally applies to serious injuries to the head or other parts, in which any attempt to walk is out of the question.

There are some special fractures which are not treated by splints. The following are worth mention.

Collar bone—This bone is more commonly broken than any other. The injury results from falls on the arm or shoulder, and is often met with on the ice, in the hunting field, or at football. The symptoms are pain, loss of power of raising the arm, and unevenness or perhaps grating, discovered by passing the finger along the bone. These symptoms are very characteristic, and the treatment is simple and effective. A pad the size of one's fist is put into the armpit, and the arm is held against the chest with the hand pointing upwards and across towards the opposite shoulder. The elbow is placed in the middle of a broad scarf, and is raised in the sling by fastening the two ends of it together over the opposite shoulder, one end going behind and the other in front of the chest. A second scarf encircling everything just above the elbow makes all secure and comfortable.

Broken Ribs—Severe pain on breathing is the most characteristic symptom. The only first aid treatment is to fix the chest by a tight bandage round it. This will prevent movement of the broken bones, and so relieve pain.

Spine—This is fortunately only endangered by very severe injury. Fractured spine has, however, been met with in the hunting field from such accidents as a fall on the back across a log of wood. The fracture is associated with injury to the delicate spinal cord, which shows itself by paralysis of the lower and perhaps upper limbs also. It is a most grave disaster and the patient should not, if it can be avoided, be moved until a medical man arrives, lest still more serious damage be done.

DISLOCATIONS—By dislocation is meant the displacement of a bone from its socket. A dislocation therefore always occurs at a joint. The signs of dislocation are markedly different from those of fracture. There is no crepitus felt, and, in place of increased mobility, there is loss of movement of the limb. There may be in different instances either shortening or lengthening.

The commonest joints dislocated are the shoulder and elbow. The treatment consists in reducing or replacing the bone in its socket. This must be attempted only by a medical man. Much harm has been done by amateur pulling at a dislocation in the vain hope of effecting reduction. Until a doctor sees it, a dislocation is to be left alone, except that the limb may be made more comfortable by support or relief of pressure of clothing.

SPRAINS are the commonest of accidents, and are met with constantly in the pursuit of sport. They may be trivial, but on the other hand they are often severe injuries, which may take long to recover from, and leave more lasting effects than fractures. Sprains are never to be trifled with. The injury is principally to the ligaments, which bind the bones of a joint together, and these are sometimes much torn by the sudden wrench given them. Sprains are exceedingly painful and are often followed by much swelling and bruising of the joint, due to escape of blood from tiny torn vessels.

For treatment, rest is the first thing, and no attempt to "walk it off" must be allowed. The injured man should be moved as though he had a fracture. The joint should be raised as high as possible to lessen pain and swelling, and cold and pressure must, during the first few hours, be applied to it. Wet cloths should be wrapped round the part and should be kept moist with spirit and water, allowing the air free access to encourage evaporation. It pays well to start the treatment of a sprain early, and if taken in hand at once serious results may often be prevented. Herein lies the advantage of intelligent first aid.

HEAD INJURIES—There are several severe injuries which may follow a fall on the head, or such an accident as a blow from a piece of falling rock on a climbing expedition. The important point is how much damage has been done to the brain. There may be concussion, laceration, or compression of this delicate organ, accompanied or not by a fracture of the skull. From a first aid point of view they may be classed together and call for the same treatment. Whenever unconsciousness, even if it is only transient, follows a head injury, the case must be regarded as serious, and other symptoms of grave indication are bleeding from the ear or nose, and twitching or paralysis of the limbs. The proper treatment is to lay the patient on his back with head a little raised and clothing loosened. If there is a scalp wound, the bleeding from this must be stopped. No attempt to raise the patient must be made, and he must be kept quiet and not be talked to or allowed to talk. Any necessary movement must be carried out with great care on a stretcher, and with as little jolting as possible.

TRANSPORT OF THE INJURED—The best way of conveying an injured person from place to place is a problem which has often to be faced. If he cannot or must not walk, he should, if possible, be carried on a stretcher. He will be far more comfortable conveyed thus than in any vehicle, except a properly equipped ambulance wagon. If a cart is used, four wheels should be chosen rather than two. A cab, and especially a hansom, is a bad form of conveyance, for it is impossible to stretch the patient out flat therein. A wagon may be made fairly comfortable if the floor be first covered with plenty of twigs and straw to diminish jolting, which is intolerable to one who is badly hurt.

But a stretcher is the best thing, and this may have to be extemporized. At a pinch, a hurdle or short ladder will do if well covered with soft litter. But a better stretcher can be made as follows:—Two saplings or other strong poles, such as pitchforks, oars, or boat hooks, should be obtained for the supports of the stretcher, which is completed by stretching between them empty sacks, rugs, or blankets. The sacks may have holes cut in the corners and the poles inserted in the loops thus made. Or a pole may be rolled tightly in each end of a blanket, which is fixed at the appropriate distance by nailing, or tying firmly to the pole. Even buttoned coats have been used with sleeves turned inside out and the poles inserted through them. Three at least will be required to make the stretcher long enough. Whatever material is employed, it should be stretched as tightly as possible, and this will be facilitated by binding cross-bars at each end. It is well to test an extemporized stretcher by putting the heaviest man of the party on it first. The patient must be lifted carefully from the ground on to the stretcher laid at his side. Two persons should stand facing one another on each side of him, and, stooping down, should pass their hands one under his shoulders and the other under his hips. The hands meeting beneath the patient should be locked together, and then, while a third person takes care of the injured part, he may be raised from the ground and then lowered on to the stretcher, or even carried a short distance in safety. The bearers should carry the poles in their hands and not on their shoulders, and, walking always out of step to avoid swinging the stretcher from side to side, should take short strides, never lifting their feet far from the ground.

SPORTS AND THEIR ACCIDENTS—Having gained a general idea of the proper treatment of accidents, it will be well to consider the special dangers of individual sports.

Angling—An accident which may occur is a hook catching in the flesh. If the barb is buried, it is a mistake to attempt to pull it straight out, but the point should be pushed through until it emerges from the skin. The hook can then either be pushed right through or the barb cut off before it is withdrawn.

Boxing—Serious accidents very seldom happen with the gloves. A black eye is of course common enough, and should be treated, like any other form of bruise, by the immediate application of cold to the part affected. The sooner a cold pad is applied after the injury, the less blood will escape from the vessels, and the less will be the resulting disfigurement. Raw beef steak is not a bad thing, but it is easy with ice or cold water to make a more effective and less unpleasant pack.

If a boxer gets a broken nose, he should put himself straightway in a surgeon's hands, for if the bones are not replaced in position an ugly deformity results.

A heavy blow on the lower jaw, even with a well padded glove, may occasionally fracture the bone. The pain of the injury is very great, and is best relieved by fixing the lower jaw to the upper by means of a folded handkerchief, the centre of which is placed under the chin with the two ends tied over the top of the head. The upper jaw then acts as a splint, and steadies the broken bone until such time as more effective measures can be taken for setting the fracture. Injury to the brain occasionally follows a blow on the jaw from transmission of the force through the hinge of the jaw at the base of the skull. Backward falls are dangerous when the head strikes a hard floor, for this may lead to concussion of the brain.

Cricket—Such accidents as occur in cricket are due to the ball. A knock on the head is a danger to which the batsman and wicket-keeper are especially exposed. Should insensibility follow for ever so short a time, the case should be treated as described under head injuries, with the greatest care, for fear of serious effects.

The knee-cap has sometimes been broken by a blow from a cricket ball on the bent knee, but injury more often follows a sudden muscular effort, such as is made in a violent attempt to recover lost balance while the knee is bent. Its effect is to disable the injured leg, which cannot be lifted from the ground. It should be temporarily treated by a splint on the back of the leg, which must reach from the knee to the hip.

A hot catch may result in a dislocation of one of the joints of the thumb or fingers. The deformity in such a case is very marked, the digit being bent backwards at the joint. It is important that the bones should be put back in their place as soon as possible, and if skilled help cannot be obtained, no harm can be done in attempting reduction by simply pulling steadily on the end of the thumb or the finger, as the case may be.

The sickening pain and faintness which follow a blow on the lower part of the person are well known. The best remedy is rest and the application of cold, which may be extemporized by a little ice in a tobacco pouch.

Cycling, with the introduction of the "Safety," has lost much of its danger. Accidents are now mostly due to inexperienced or careless riding, and are few in proportion to the enormous number of cyclists; but a rider thrown suddenly on to the road is liable to a variety of sprains, contusions, and lacerations. Among fractures, the most common are those of the collar-bone and of the bones of the wrist and ankle. (It may be worth remembering that the inner tube of a pneumatic tyre makes an admirable elastic band for a tourniquet.)

Football, it must be admitted, leads often to accident, but seldom to loss of life. The recorded fatalities are mostly from head injuries.

A severe muscular bruise, generally of the front of the thigh, well known to football players, is treated in the ordinary way, by rest and cold applications.

There is a certain skin eruption, known as "Football Impetigo," more popularly as Scrum Pox, which is observed on the face and neck of footballers, chiefly in the ranks of Rugby forwards. This affection has been epidemic in certain of the public schools and in the universities. Though not dangerous, it is very contagious and spreads from player to player. As soon, therefore, as it appears in a team, the member attacked should abstain from further play and put himself under medical care. Fortunately the disease soon yields to proper treatment.

Football players occasionally get damage to their ears, resulting in the formation of blood tumours, which should be taken in hand surgically, or an ugly deformity may remain.

Hunting.—The accidents are chiefly those which have been already described. The more serious are head injuries, fractures, and dislocations. Hunting is the only sport in which a fracture of the spine is likely to occur. The commonest fracture is that of the collar-bone, which results from falls on the outstretched hand. If the bone does not break, the accident may lead to a dislocation of the shoulder. As this injury is not uncommon in the hunting field, its signs, namely, pain, loss of power of movement of the arm, with deformity of the shoulder, but no crepitus, should be kept in mind.

In the application of temporary splints, the straps of the harness may often come in useful, and hunting-crops will in emergency do for short splints, though more suitable lengths of wood will generally be found in hedge or fence. Again, two or three girths stretched across a wooden frame will make an admirable foundation for a stretcher.

Riding men have a special injury of their own, the "Rider's Strain." It is due to a rupture of some of the fibres of the muscles on the inside of the thigh, and occurs in a violent effort to grip the saddle when the rider is slipping. It is generally seen in elderly riders or in those out of practice. Any attempt to remain on horseback after the accident will be extremely painful and must tend to aggravate the injury.

Lawn Tennis claims the dignity of naming at least two injuries, the "tennis elbow" and the "tennis leg." They exemplify the advantage of being in training, for they are far more likely to occur in players who are out of form, and are, therefore, most common at the beginning of the season. The precise injury is not the same in every case of "tennis elbow," but the effect is always an inflammation and swelling which prevent the use of the arm in play for a considerable time. The essential treatment is simple, namely, to rest the arm until it recovers. Tennis players should take it easy at the beginning of the season, and should especially avoid violent back-handed strokes until the muscles get trained to their work.

The "tennis leg" is due to the rupture of some of the muscle-fibres in the calf. The player, while running, feels as if he had received a sudden violent blow on the back of the leg, and can hardly stand; sometimes he actually falls. This is an injury most common in the middle-aged, and may be met with in other sports, when the muscle has to bear a sudden and unusual strain. Rest is the proper treatment, no attempt being made to stand on the leg until a doctor has seen it.

Mountaineering—The skilled climber reduces the dangers to a minimum by obeying certain rules of precaution, to forego which he would consider unsportsmanlike. In this connection it is significant that accidents are proportionately fewer among the members of the English Alpine Club than among other climbers. There are, however, certain risks which no amount of human forethought can always avoid, especially those arising from falling rock and snow. Mr. Wherry, in his *Alpine Notes*, points out another peril which comes unexpectedly, that of thunderstorms. Should a comrade be struck by lightning and lie unconscious, the best hope of restoring him to life is to resort at once to artificial respiration, as

described in the rules for the restoration of the apparently drowned. (*See* LIFE SAVING.)

The so-called "Mountain Sickness" is a malady which is induced by the change in atmospheric conditions at high altitudes, and particularly the lack of a due proportion of oxygen in the air. In its worst form it is not seen in Europe, but its symptoms have been graphically reported by Mr. Whymper and Sir W. M. Conway from the Andes and the Himalayas. To avoid *mal de montagne* in climbing these lofty mountains it is necessary to postpone heroic ascents until lesser feats have trained the heart and lungs.

Of the conjunctivitis or inflammation of the eyes, which follows exposure to sunlight reflected from snow, it is unnecessary to say much, for every one who has been on a mountain knows how necessary it is to protect the eyes while on snow by smoked glasses. It is best treated by frequent bathing with warm water and keeping the eyes covered from the light by a large shade.

The intense cold met with on mountain tops offers a danger to the climber in the form of frost bite. The parts attacked are first blue and inflamed, and afterwards white and cold. This condition, if allowed to go on, may even lead to the loss of toes or fingers from gangrene. Friction is the proper treatment, and on no account should the return to warmth be too sudden. The patient should not be allowed near a fire until the circulation has returned.

Rowing—The remarkable diet a rowing man is induced to adopt when he trains for racing is chiefly responsible for the appearance of those troublesome boils from which he so frequently suffers. The sudden change in diet, and particularly the excessive amount of animal food taken, leads to an alteration of blood condition, of which boils are the outcome. They appear especially in parts exposed to friction, and are certainly less common with sliding than when fixed seats are used. The best thing to do when there is the least threatening of a boil, is to protect the inflamed spot from pressure and friction by a ring of thick felt-plaster. This often prevents the formation of matter, and the inflammation may subside. When once matter is formed, however, the boil should be opened without delay by a surgeon. The discharge from a boil, if rubbed into the surrounding skin, will readily produce a crop of others. For this reason poultices and fomentations should only be used with careful precaution under medical direction, and care should be taken to change the clothing frequently, and by strict cleanliness to lessen the chance of inoculation.

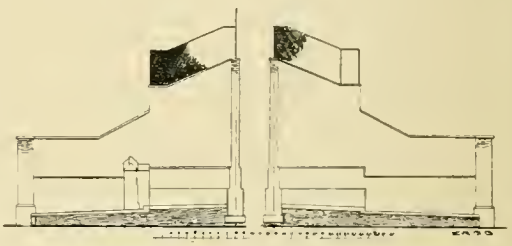
Shooting accidents are much more common than they ought to be. They almost invariably reveal a carelessness which is inexcusable, and almost criminal, in handling a weapon so dangerous as a loaded gun. The arch-offender is the young or untrained shooter. Gunshot wounds are often most disastrous in their results, and their prevention is infinitely easier than their cure. At a short range a shot gun will inflict a far worse injury than a rifle. The aperture of entrance of the wound is round and comparatively small, and its edges are blackened with unburnt powder. The shot, in passing through the tissue, quickly spread, tearing muscles and splintering bone in their passage. The exit of the charge leaves a huge lacerated hole. Such wounds are liable to bleed furiously from division of arteries, and to stop the bleeding at once is an urgent duty. To this end a tourniquet should, if possible, be applied. If the wound is in such a situation that this cannot be done, an attempt to check the blood by tight plugging and bandaging should be made.

At a long range less damage is done, for the clothes largely break the force of the shot, which spread considerably. The principal danger is to the unprotected face, where loss of sight may too easily follow the passage of a stray pellet into the eye.

Swimming—The question of the restoration of the apparently drowned will be dealt with under LIFE SAVING.

J. B. BYLES.
SAMUEL OSBORN.

FIVES—Nothing definite is known of the origin of the game of Fives. To hit a ball in turn with the hand above a line on a wall is Fives in its simplest form, and the game is played by boys who have never seen a Fives Court, nor heard the name of Fives. From this instinctive desire to hit a ball against a wall, the modern game — with rackets its "fairer daughter"—has been developed. At Eton a fortunate accident influenced the character of the game. The earliest Eton court was between the Chapel buttresses, and the end of the balustrade of the Chapel steps, projecting into the court, was the first "pepper-box" in the history of Fives. From this ancient court, too, were derived the step and the hole which, with the "pepper-box," have given the Eton game its special character. But elsewhere the game was played without these accidental obstacles and advantages, and the plain court, or Rugby game, as it is called, has as many adherents as the other. Of the great schools, Eton, Harrow, Westminster, Charterhouse, and Wellington play



ETON FIVES COURT, RIGHT AND LEFT SIDES.

the one; Rugby, Winchester, Marlborough, Clifton, and Repton play the other.

In both games the aim of the players is to hit the ball above a line or ledge on the front wall, in such a way that their opponents shall not be able to hit it back again above the line before it has touched the floor of the court for the second time. The "bully" or "rally" begins by the server so tossing the ball against the walls, that it first hits the front wall above the line and then the right side wall; his opponent, on getting a service which suits him, returns it back to the front wall, hitting the right wall first; this is called "first-cut," and after it the ball is hit back to the front wall by either side in turn. In both games the laws and method of scoring are much the same, and in both the chief qualifications for success are skill in placing, a good eye for volleying, and a left hand which is "not afraid of work."

In the Eton court the line is twenty inches higher up than in the Rugby; there is no back wall, and the presence of the pepper-box, the hole, and the step, make the game in practice as different from Rugby Fives as in theory it is

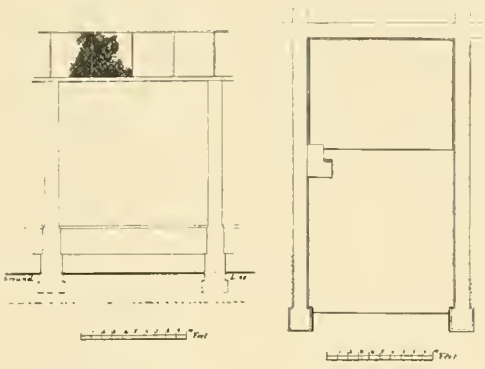
similar. The Eton court is almost invariably open, the Rugby court is generally covered in. The one has the advantage of better light and fresher air, the other makes Fives possible in wet and snowy weather when other exercise is hard to get. Both games afford most excellent exercise to all muscles of the body; so excellent, indeed, that it is a matter both for surprise and regret that few men continue to play after they have left school. The game costs little in time or money, and can still be played with success at an age when football has long ceased to be possible, and when cricket is beginning to lose some of its charm. A speculator might do worse than build Fives courts in our big towns. There are so many hundreds of Public School men in London who miss the opportunities for exercise which they have had at school, that the building of courts ought to be a remunerative investment. It is worthy of note that the Girls' Public Day School Company are building Rugby courts in some of their schools, but it is at present too early to say whether the game will ever be popular with girls.

The Rules—The Eton rules are the copyright of Mr. R. Ingalton Drake, of Eton College, to whose kindness we are indebted for permission to print them. The Rugby rules are not quite the same at all schools. Those printed here are the rules of the game as played at Winchester, and were drawn up by that famous Fives player, Mr. A. J. Toye, whose courtesy has allowed them to be reproduced here.

The Balls—In the Rugby game the ball weighs $1\frac{1}{8}$ oz.; the Eton balls are larger, and weigh $1\frac{1}{4}$ oz.; they vary greatly in quality, and much of the enjoyment of the game depends on getting good balls.

THE ETON GAME—A few hints may be useful to beginners on the position of the four players in a game in which A and B with first innings are playing C and D.

The Server—A, who begins serving, is bound to give C—who is said to be "in holes" —the sort of service which he prefers. Some players have eccentric preferences, but they must be humoured; otherwise time is wasted, and the enjoyment of the game, which depends greatly on the prevalence of good temper, may easily be lessened. In serving, and in serving only, A's aim should be to give C exactly what he wants. After serving, A has to decide where he will await "first-cut." If he has a good eye for volleying, and a left hand little inferior to his right, he should stand just in front of the pepper-box and about a yard from the left wall, prepared to volley the first-cut with either hand, or to move out of the way of a ball which will go to his partner in the outer court as a plain long-hop. If he has a weak left hand he should move forward and nearer the left wall. In this position he will be able to volley with his right many balls which in the other he would have missed with his left. Some players, whose weak point is volleying, move across to the left front corner and face the pepper-box, in order to get up on the bound



Eton Fives Court, Front Wall and Ground Plan.

the common first-cut which hits first the left wall and then the pepper-box. The innings of a player of this sort will not often add much to the score; but if he cannot volley, this course is probably his wisest, though, like "standing back" in wicket keeping, it is a confession of weakness, and such a player when serving fails to accomplish half his proper work.

First-Cut—C, on getting a service exactly to his mind, must above all avoid so returning it that it comes into the middle of the outer court as a long-hop; long-hops in the open are as easy in Fives as full pitches are in cricket. But if C's first-cut is of this kind, he must take great care, by moving forward at once, to get out of the way of B, his opponent in the back court. A "let" at this point of the game is justly irritating to B. C has made a bad stroke, and ought to give B the most ample opportunity to profit by it.

C in returning the service should, usually, hit hard at the right wall about a foot from the corner and a little above the line. Such a first-cut will, if not volleyed by A, hit first the left wall and then the pepper-box, and A in volleying will have to use his left and presumably weaker hand, unless he has moved nearer the left corner, as described above, in order to take it with his right. If C sees this forward movement of A in time, he should either aim a little higher and direct at the right corner, which may bring the ball out of reach of A's right, or else, by aiming about two yards to the right of the corner, he will give A a much more difficult volley at close quarters. If A has moved across to the right corner, it is best to hit rather gently at the corner, in order that the ball may go straight to the pepper-box without first hitting

the left wall. Such a ball may either go into the hole, or run back along the left wall before A can get across, but the stroke should not be hard enough to let A eventually take it off the front wall.

If the server is conspicuously the stronger opponent, a very useful first-cut is the stroke which, hitting only the front wall—as described in the second part of Law VI.—keeps close to the right hand wall all the way to the end of the court. The stroke needs practice, or it will degenerate into a long hop in the open, or hit the side wall too soon and be quite easy. It should keep as near to the right wall as possible without actually touching it and look likely, if left alone by B, to hit the projecting pier at the end of the court.

Above all, C must vary his first-cuts. The one the server at first finds most difficult will become quite easy if constantly repeated, and the best volleyer can often be got rid of by a simple return which pitches before it reaches him.

The Server's Partner—B should stand near the right wall at the back of the outer court. He must expect *every* first-cut to be hit straight down to him, and only move forward when he sees it is not so hit. If he is too near the middle of the court or off his guard for a minute, a quite easy first-cut down the right wall will make him look foolish. But if he is in his place and ready, he will get some easy opportunities for good strokes from first-cuts which have gone round the three walls without hitting the pepper-box or have been hit down the right-hand wall with better intentions than results. These he should return hard and low into the pepper-box—unless A has stupidly put himself in front of it, or C is in a good position for volleying—or else he should hit them into the left hand corner of the outer court, where the pepper-box in front of him makes D's stroke an awkward one. The really difficult first-cut, which hugs the right wall, B had better take before it reaches the end of the court, where the projection will only add a new difficulty: if he is not too ambitious and is content to get behind the ball and half push, half hit it, he is more likely to get it up than if he hits hard at it or tries to do something brilliant with it. B's greatest difficulty will be when the walls are wet. Then, first-cuts aimed at the corner will, after hitting the right wall, come off the front at a much sharper angle than usual, direct to the left corner of the outer court. On such days, as B will have to look out for both corners at the same time, he must stand more to the left, and the server should stand a little more to the right than usual.

The Fourth Player—D at first has nothing to do except to prevent any first-cut from pitching out of court. He will naturally stand as far back as possible, but must remember that if he has to jump he must alight on the floor of the court.

The Bully—As soon as the first-cut has been got up, and the "bully" has commenced, all players alike will avoid hitting long-hops into the open or giving their opponents easy opportunities to volley. They should aim as much as possible at the hole and the pepper-box and at the corners of the outer court. A player in the inner court will volley whenever he gets a chance; he should keep near the left wall, but must leave his left arm room to work, and must be careful when his partner is hitting not to guard the pepper-box with his body. He should keep his head below the line, and, without turning his body, watch what is going on behind him, and when he gets an easy volley he should hit his very hardest, getting rather over the ball, and so aiming that the ball will come straight at the head of his opponent in the inner court, or go to whichever back corner is at the moment unguarded. A common fault is a want of agility in getting out of the way of an opponent; it must be remembered that a "let," in forcing the "bully" to begin again, is often unfair to one side or the other, and a player who is frequently in the way either annoys his opponents or irritates his partner by spoiling his winning strokes.

The players in the outer court must be always backing up, ready to take anything their partner cannot reach. The harder they hit the better, as the more difficult it will be for their opponents to volley, but they must aim low, or they will hit out of court. A soft, high stroke is usually bad, but it is useful if it brings the ball just behind the pepper-box, and often, when in the left back corner a hard stroke is difficult to place properly, a soft, high stroke brings the ball back to the same corner with a bound high enough to reach the ledge. A soft, low stroke only pays if your opponent is so far in the right front corner that your stroke hits the pepper-box before he can get across. All good judges agree that players in the outer court should hit at the front wall first.

THE RUGBY GAME—In discussing the Rugby game it must be remembered that all Rugby Courts are not the same. All alike differ from Eton Courts in having no pepper-box, hole, or step; they are generally covered in and have a back wall which makes slogging less dangerous. But at Oxford and Winchester there is a little buttress on the left hand wall, projecting at an angle of 135°, and at a distance of 9 ft. 9 in. from the front wall. This naturally divides the players into up and back pairs, but in a court with no buttress one partner takes everything on the left and the other on the right side. The buttress court is certainly a modification of the original court—probably the Eton pepper-box making itself felt beyond its legitimate sphere of influence—and at Rugby itself, Marlborough,

Clifton, and Repton, the courts are all without it. That the buttress improves the game most impartial players who have tried both kinds of court are agreed, but its presence or absence has by this time become a matter of tradition in public schools, and in matters of this sort changes are impossible.

The Stroke—The leg furthest from the hand which is making the stroke should be advanced, with the weight of the body thrown forward upon it. The best style of stroke at Rugby Fives closely resembles a jerk, the twist of the wrist putting on the cut.

The Server—In a double game the Server, if there is a buttress, is expected to take all balls in the front part of the court and to leave the back of the court to his partner. He should stand rather in front of the buttress and well away from the side wall. If there is no buttress —or, in a single game, even if there is—he must stand further back, ready to return any sort of first-cut and to take everything that pitches on the left side of the court. He must of course serve as his opponent may direct.

The Player who returns the Service should vary as much as he can the pace and angle at which his strokes come off the wall, and must notice the weak points of his opponent's play. First-cuts should usually be hard and low, and should hit the left wall before they pitch, but variety is the great thing to aim at, and a too frequent use of a favourite stroke has lost many a game. Many players ask for a service which falls close to the right wall, and then hit low and hard at the corner where the right wall joins the front wall. The ball, especially if it is new, comes off very fast, and with a great deal of cut, straight to the back left corner and is very difficult to get up.

Another favourite stroke which needs, and repays, practice, is made off a ball rather far out, by hitting the side wall so far from the corner that the ball comes on to the front wall to the left of its centre, just above the line, and falls at the very bottom of the left wall near the front corner. Such a ball will often not rise at all. In a single game a soft stroke is sometimes useful. It should hit the right wall very softly, not very near the corner, come on to the front wall to the right of its centre and fall very close to the front too softly to reach the left wall at all. But in the double game soft first-cuts are not very profitable; it is wiser to hit hard and low. If a first-cut is hit high, it should be hit very hard indeed. The ball will then hit the left wall more than half way up and come off the back on to the right in the back corner.

The Rally—When the rally has once begun, the beginner should try to watch his opponents. This not only aids him in placing his own strokes, but enables him to judge the direction in which his opponents are going to hit, so much so indeed that, while the poor player is always running after the ball, the good player seems to make the ball come to him. There is much less volleying than in Eton Fives. Low volleying pays well, but needs a good eye: high volleying the back wall makes of little use, for the rapidity of the volley which makes it so useful in the Eton game avails nothing when the ball can be waited for and taken off the back wall. With no pepper-box, and at best only a little buttress at which to aim, and with volleying difficult or useless, the beginner who wishes his strokes to score cannot pay too much attention to placing the ball. It is to his skill in placing he must chiefly look for success. Strokes into corners, or just falling short of corners, or hugging the side walls, or hitting the walls at their angle with the floor, can never be practised too much. Opponents who are elderly or in bad training, should be given plenty of running—*e.g.*, when both are at the back of the court a soft stroke into a front corner, hitting the side wall first, may, without affecting the result of the rally, still influence the result of the game.

In taking balls in back corners, beginners must not get too near the side wall, or the ball coming off it on to the back wall will prove difficult. Generally, in a corner, to be a little too far from the ball is a mistake more easy to remedy than the opposite one of being too near. A ball close to the front wall can be killed by a gentle low stroke so aimed that it will nick the side wall at its angle with the floor. In the course of the rally the beginner must expect to get many balls which it will take all his skill simply to get up; but, when he does get an easy return, he should try to do something definite with it. For instance, if he gets a ball in the middle of the right hand court, he may, with a hard low stroke at the left front corner, hitting the front wall first, bring the ball into the right back corner. To the practised fives player many other strokes will suggest themselves, and a beginner can learn more from watching good players than by any other means.

The Literature of the game is scanty, but all fives players may be referred to Mr. Arnan Tait's brilliant treatise on Fives in the All England Series, to the Badminton Fives, and to an article by Mr. G. C. Harrison, the old Oxford slow bowler, in the Fettes College Magazine for December, 1896. Mr. Ainger's interesting article in the Badminton Series deals mainly with Eton Fives. Mr. Harrison writes on the Rugby plain court game, but Mr. Tait's essay leaves no detail of either game untouched.

The Eton Rules.

The court is enclosed on three sides and open at the back. The "front" wall is the wall facing the player, and the "right-hand" and "left hand" walls are the walls on his right hand and left hand respectively. The "step" is a shallow step dividing the court into two portions, an inner and an outer court.

The vertical face of the "step" does not reckon as part of the floor of the court.

"On-wall" and "off-wall" denote the floors of the inner and outer court respectively.

The "pepper-box" is a buttress projecting from the left-hand wall. With the "step" it encloses a small square portion of the floor called the "hole."

The "line" is the ledge running across the front-wall at the height of 4 feet 6 inches.

A vertical line is marked on the front-wall at a distance o 3 feet 8 inches from the right-hand wall.

I. The ball must in every case be hit "up," *i.e.*, it must be returned against the front-wall on or above the lower angle of the "line." Any ball except "the service," which drops on the top of any of the walls of the inner court, or which, after going "up," touches the ground first outside the court, or touches any object or person outside the court, *invariably* counts against the striker, and is called a "good 'un."

II. The ball must be fairly hit with a single blow of the hand or wrist, and must not touch any other part of the striker's person under the penalty of losing a stroke. It must not be caught or held in any way except to "serve," or to stop a "blackguard" (see Rule VI.), or to save a "good 'un" (see Rule XIII.).

Position of the Players.

III. The game is usually played by four persons, two against two. Thus, if A and B (with first innings) play C and D, A, who goes in first, stands upon the "on-wall," near the "pepper-box"; B, his partner, on the "off-wall" near the right-hand outer corner; C stands near the middle of the "off-wall" ready to return the "service," and is said to be "in holes"; and D, his partner, on the "off-wall" near the left-hand outer corner.

Holes Innings.

IV. In the first innings of a game A (who goes in first) is said to have "holes innings." *i.e.*, when both A and B have been put out, A will be "in holes." This rule only applies to the side which goes in first at the beginning of a game; afterwards partners take it in turns to be "in holes." If in the first game A has "holes innings" and C is "in holes," then in the second game C has "holes innings" and A is "in holes," in the third game B has "holes innings" and D is "in holes," and in the fourth game D has "holes innings" and B is "in holes."

The Service.

V. The ball when served must hit first the front wall above the "line," and then the right-hand wall, and must fall on the "off-wall." The player "in holes" need not return the first or any "service" till he gets one to his mind, and if he fails to return the "service" above the "line" no stroke is counted. Serving a "good 'un" does not put a player out.

The First-Cut.

VI. The player "in holes" must not return the "service" before the first bound. This return is called the "first-cut." He must return it so that it should hit either (1) first the right-hand wall and then the front wall above the "line"; or (2) the front wall above the "line" between the right-hand side wall and the vertical line marked on the front wall. In both these cases the ball may afterwards hit any wall or walls, and may fall anywhere on the "on-wall" or "off-wall." Only the player "in holes" may return the service. A first-cut which is "up," but not in accordance with these conditions, is called a "blackguard." The player "in holes" or his partner may then touch or catch the ball before the first bound, and if this is done no stroke is counted. If the ball is not touched or caught, it may be returned or not by either of the opposite players at their option; and if it is not returned above the "line" no stroke is counted.

The Bully.

VII. After the "service" and the "first-cut" the ball is returned alternately by either side. It may be returned by either of the partners before the first or before the second bound, and may or may not hit the side walls. A "bully" is lost to his side by the player who fails to return the ball above the line or hits a "good 'un."

Lets.

VIII. A "let" may be claimed when the player is in any way prevented from returning, or impeded in his attempt to return the ball, by one of the opposite side. A stroke which would have hit the front wall above the "line," but is prevented from doing so by one of the opposite side, counts as a "let." A "let" cannot be claimed when a "good 'un" is hit, nor when a player is impeded by bystanders. In all cases of dispute the umpire's decision is final.

Note.—If there is no umpire a claim is generally allowed.

IX. If a ball while being returned first strikes one of the opposite side, and then the front wall above the "line," it counts as "up"; if it first strikes one of the same side it counts against the striker, whether it goes "up" or not.

X. If a ball returned by A or B strike A or B after going "up" before the second bound, it may be returned or not by C or D at their option, and *vice versâ*. If not returned it counts as a "let." If returned above the "line" no "let" can be claimed.

Scoring.

XI. The game consists of fifteen points. Only the "in" side can score points. When A is put out, B takes his place; when B is put out the side is out, and their opponents go in, the player "in holes" having first innings. The result of each "bully" (except in the case of a "let") is either to add one to the score of the "in" side, or to put one of them out, as the case may be.

Two Out.

XII. If C "in holes" loses one point to the opposite side, he is said to be "one out"; if he loses a second point, he is said to be "two out," and D takes his place; if D in his turn loses two points he is "two out" and C is "in holes" again, and so on till A and B are put out; provided that he who was "two out" first is then the first to go in; but if, through inadvertence or otherwise, he does not do so, the error cannot be corrected after the "service" has been returned. If the "out" side lose a point by failing to return a ball out of the "hole," it does not count as "one out" against the player "in holes."

Note.—For the purposes of this rule all balls which fall on the "on-wall" belong to the player "in holes," and also all balls falling on the "off-wall" which he attempts to return.

Saving Good 'uns.

XIII. If the player "in holes" hit the "first-cut" in such a way that it will probably fall out of court and count as a "good 'un" he or his partner may, if they can, prevent it from doing so, by touching or catching the ball before it falls, provided that the player touching it have one or both feet on the floor of the court, or, if he jumps for the purpose, alights on the floor of the court with the foot which first touches the ground. If the ball is caught no stroke is counted; if only touched the opposite player may, if he pleases, return the ball as in Rule X; if he fail to do so, no stroke is counted. This rule only applies to "first-cut."

Blackguard Cut.

XIV. When the side "in" reaches fourteen points, the following rules must be observed:—(1) The player serving must stand quite close to the pepper-box with one foot on the "on-wall," and the other on the "off-wall," and he may not place both feet on the "on-wall" until the player "in holes" has hit the ball. If he forgets to stand thus, and serves the ball with both feet on the "on-wall," the player "in holes," or his

partner, may try to be the first to touch the ball before it falls. If they succeed in this, the player serving is out. If the player serving or his partner touch the ball first, or if it hits the ground before being touched, it counts neither way. A player may remind his partner of this rule. (2) When the ball is properly served, the player "in holes" may return the "first-cut" against any part of the front wall above the "line," with or without hitting the side walls, and it is therefore called "blackguard cut." Rule VI., except the first sentence, is suspended at this point of the game.

Setting.

XV. If the players are "13 all," the game, as in rackets, may at the option of the out side be set to 5 or 3; if "14 all" to 3. Rule XIV. must then be observed at 1 and 2 respectively.

Single Wall Game.

XVI. When the game is played by two players only, no ball counts unless it fall upon the "on-wall," but a player may return a ball which falls on the "off-wall" if he pleases, except the "service." Of the two players, he who is "in" stands on the right-hand side of the court, and he who is "out" on the left-hand side. The "service" must hit first the right-hand wall and then the front wall above the "line." The "first-cut" must hit either (1) first the left-hand wall and then the front wall above the "line," or (2) first the front wall above the "line" and then the right-hand wall. Only so much of Rule XIV. need be observed as applies to the "out" player.

LAWS OF THE RUGBY GAME AS PLAYED AT WINCHESTER.

The court is enclosed on four sides.

The buttress (if there be one) projects from the left-hand wall from 9½ to 10 inches, at an angle of 135°, and at a distance of 9 feet 9 inches from the front wall. In height it is co-extensive with the wall, which is flush with it at both angles, so that it is impossible to hit over or behind the buttress as it has but one face.

The "line," either simply painted on the wall, or better still set upon wood, runs across the front wall at a distance of 34 inches from the ground.

I. Each game shall consist of 14 points, or aces, and a game-ball; if both sides are at 13, the game may be set at 5, or at 3 if both have reached 14, at the option of the "out" side; provided that the "in" side at the time of setting shall only take one hand the first innings after the setting, and also that no false return of the game-ball shall be allowed.

II. The first innings of the first game shall be by lot; but, afterwards, the winner of the preceding game shall go in first.

III. The side going in first can only take one hand the first innings.

IV. In serving, the server must stand by or near the buttress, the player who returns the service standing in a line with him; the out-playing partner of the server stands behind the returner, and the out-playing partner of the returner stands behind the server.

V. The ball must be served to the front and right walls in that order, and returned on one of the side walls, and then on the front wall above the line, but if a ball be falsely served, it is at the option of the adversary to return it.

VI. The player who has to return the service may not, under any circumstances, change places with his partner.

VII. If a ball, after being struck by a player, touch his partner or himself, before one of his adversaries have touched it and before it has bounded a second time, it counts as an ace or hand-out against him, as the case may be.

Note.—The players shall be at liberty, before beginning to play, to agree that if the ball in returning from the wall hit the player or his partner it shall be a let instead of an ace or hand-out, but this shall only be allowed if the players are unanimous, and the marker is informed of it before the beginning of the game.

VIII. If a player strike at and miss a ball, his partner may play it, but he cannot claim a let if his adversary is in the way.

IX. If a ball strike the roof or gallery of a covered court, it is a hand-out.

X. Under no circumstances may kicking the ball be allowed.

XI. In returning the game-ball, the third successive false return counts against the striker. Only on the first occasion of game-ball being served need game-ball be called.

XII. Any service returned below the line counts against the striker.

XIII. The above rules apply to single as well as to double fives.

E. L. FOX.

FLOUNDER (*Pleuronectes flesus*).

MEASUREMENTS, ETC.—Length of head 4, of caudal fin 5⅔, height of body 2½, in the total length. *Eyes*—less than 1 diameter apart, and the lower slightly in advance of the upper. They are so prominent that they are capable of observing objects on both sides of the head. Lower jaw in advance of the upper. The length of the maxilla equals about ¼ that of the head, but does not reach to beneath the eyes. Anterior nostril tubular, having a small opening; posterior one oval, with wide lips. An obtuse ridge passes from the interorbital space to the lateral line. *Teeth*—conical, blunted, two rows in the upper, and one in the lower jaw: the outer row on the upper jaw of the blind side consists of 15 teeth, the corresponding row in the lower jaw of about 17. *Fins*—dorsal, commences opposite the middle of the upper eye, its longest rays in the posterior half of the body. Pectorals on the two sides similar, and about ⅓ as long as the head. Ventrals free. A strong spine, pointing forwards, exists before the base of the anal fin, which latter is similar to the dorsal. Caudal cut square. *Scales*—small, cycloid; rudimentary ones on the cheeks. A rounded and rough tubercle between the bases of the dorsal and anal rays. *Lateral line*—commencing opposite the angle of the mouth, curves round the lower eye, and having joined the interorbital ridge is continued to the centre of the base of the caudal fin. Coecal pylori short. *Colours*—vary very considerably, and depend upon that of the ground of the locality which they inhabit, but even then scarcely two will be found exactly similar. The colour of the upper side is generally olivaceous brown, with or without darker blotches. Occasionally examples are very dark, when they are termed sea-flounders. The under surface is white.

Day's *Fishes of Great Britain and Ireland*, vol. II. p. 34.

FLY-TYING—[*See* SALMON and TROUT].

FOOTBALL—RUGBY FOOTBALL—

History of the game—I propose to devote this part of the article to a sketch of the various phases of development which the game has undergone from the period of twenty a side up to the present time.

When I was a school-boy at Clifton College, more than twenty years ago, the game played there was identical with that at Rugby School. The number on each side was twenty, and the arrangement of the field was as follows: two full backs, one three-quarter, and two halves. It was an act of high treason to put

down one's head in the scrummage, and, if anybody did so, an opponent would promptly remind him of this breach of etiquette by raising his knee sharply against it. Hacking was permissible and, as there were no umpires to appeal to in the case of a breach of the rules, such as, for example, off-side play, the innocent party used to take the law into his own hands, and with a shout of "off-side, Sir," administer the orthodox punishment for the infringement by violently kicking the shin bone of the offender.

Hacking or tripping over were quite as much resorted to as tackling, and though it may in these more civilised days appear a rather brutal and crude method of stopping a runner, it required for success the greatest skill and accuracy. W. O. Moberley, the old Rugbeian and Gloucestershire cricketer, was a perfect master of the art. And not only was it legal to hack over the carrier of the ball, but also the first on side, and I have seen as many as four of the van brought to earth by this means.

There were extraordinary formalities to be gone through in taking the ball out for a place kick at goal. The kicker used to pick up the ball and make a mark at the place where the try was gained. He then went to the goal line, and, having made a second mark opposite the former one, he and the placer proceeded parallel with the goal line to as far away from the goal posts as they liked.

The defending sides were allowed to stretch forward to their utmost, provided they kept the hindmost foot on the second mark. The kicker, facing the placer and a few feet apart from him, gently punted the ball to him, and he made another mark as far inwards and towards the goal line as he could manage to do with safety.

The defending side endeavoured to frustrate this manœuvre, either by spoiling the catch, if they were able to reach the ball, or by seizing the leg of the placer while he was attempting to make, but before he had actually made, his mark. If they were successful in either, the kick at goal was lost. Mauls in goal were very frequent. I have seen as many as ten men in one, and there was no limit to their duration imposed by the laws.

The art of scrummaging consisted in straightforward propulsion. One of those in the front rank was expected to get the ball between his legs, and hold it there tight, while his forwards pushed on him might and main. The packs frequently lasted two or three minutes, with forwards equipoised; and, to show how times have altered, I have only to mention that in those days the longest scrummage was considered the best and that the spectators on the touch line often had their watches out, timing its duration.

The half-back, owing to the tight packing of the forwards, had a much easier task than he has now, and it sometimes occurred that he was right across the field before the scrummage had become dismembered.

When a ball was kicked into touch, both sides raced to touch it down, and it was legal for opponents to charge one another in the struggle for its possession.

The first step towards a faster game was the diminution in the number of players from twenty to fifteen. For a very long time after this, however, the original arrangement of the back players was preserved. By this change the forwards, now ten in number, found themselves able to break away from the scrummage, in which they had hitherto been boxed up, and to the art of dribbling, in consequence, there was imparted an enormous impetus. Heads down and watching the ball in the scrummage followed. Hacking in club games was abolished, though Rugby School retained it for some years later; a ball going into touch was declared by the rules to belong to the side other than the one which kicked it in, and two umpires and a referee made their *début* as adjuncts to the game, but the referee was only authorised to adjudicate when there was a diversity of opinion between the umpires. The maul in goal was retained even later than Vassall's day, but the preliminaries to a place kick, which I have described, were never in vogue in club football.

The next step in the same direction was a device known by the name of "Foiking," which emanated from Oxford. It consisted in a wing forward dexterously extricating the ball with his foot from the side of a scrummage. When the play had become very much faster, it was found that one man at three-quarter was no longer able to hold the field, and he was reinforced by a second, an addition which reduced the number of forwards to nine.

Next in order there was evolved a science which has had more to do with revolutionising the character of the game than any other innovation. I refer, of course, to "passing." To whom belongs the credit of the invention is a matter of much dispute, but its elaboration was unquestionably the work of the Blackheath team. It was at first entirely confined to the forwards, but by degrees spread to the halves. Who was the first half to pass out a ball is by no means clear. Many aver that J. Payne, of Lancashire, set the example, but Alan Rotherham was the first to reduce the art of feeding to a science, and remains to this day the pattern whom every half-back strives to imitate.

We come now to the addition of a third three-quarter. It happened in a somewhat peculiar manner. The South team, as originally selected, only contained two three-quarters. One of the forwards, P. Newton, however, could not play, and Harry Vassall wrote to the Committee from Oxford that they had a player there of extraordinary ability in the person of C. W.

Wade, and strongly urged his inclusion. Under the circumstances the Committee resolved to play him, though not without considerable misgiving. The brilliant success of the Southern trio, W. L. Bolton, A. M. Evanson, and C. W. Wade, on Richardson's field, settled this question for good.

The next development was the passing by the centre three-quarter to his wings, and in this the pioneer was Rawson Robertshaw, who, at centre, applied the same principles which Rotherham had demonstrated at half. Coincidently with the addition of a third three-quarter the backs were reduced from two to one.

It remained for the Welshmen to add yet another three-quarter, but for a long time the other countries did not adopt the alteration, nor indeed was this to be wondered at, seeing that Wales for a number of years was badly beaten by England, Scotland, and Ireland, who adhered to the three system.

But, just at the moment when the four three-quarter game appeared likely to die out, there came to its aid two most powerful allies in new methods of scrummaging, viz., heeling and wheeling, which very soon became the fashion, and superseded the time-honoured straightforward pushing game.

It is important here to note that up to this time the four three-quarter game had been a failure, because eight men were unable to hold their own against nine in the packs in the old style. By the introduction of heeling and wheeling this state of things was altered. The ninth man was no longer of the same value in a scrummage which was worked by the manœuvre of wheeling, or from which the ball was heeled back almost at the very moment of its insertion, as he was when the pack had to be carried by superior power and weight.

The device of wheeling originated in Yorkshire, and one of its earliest exponents was the then famous Bradford Club. Where the practice of heeling back first came from it is difficult to say. It is, of course, a clear breach of the rules of the game, but it was countenanced so long without the interference of the authorities that it ultimately came to be regarded as an unwritten law.

The last alteration up to date is in the relative position of the two halves. They no longer stand level with each other, but, with a view of facilitating the shortness, quickness, and accuracy of the passing, one of them takes the scrummage, the so-called "donkey-half," while the other stands back midway between his *confrère* and the three-quarters, transforming himself, as it were, into a quasi fifth three-quarter.

As the popularity of the game increased, and consequently partisanship became more violent, it was found impossible to get impartial umpires, and in their stead two linesmen were substituted, whose sole duty consisted in holding up a flag at the place where the ball went into touch, while the referee had the sole right of deciding on appeals made to him for breaches of the rules, and signified his allowance of them by blowing a whistle. Lastly, the right of appeal was abolished, and at the present time the referee is invested with an absolute discretion.

That the reduction of the number of players from twenty to fifteen, which brought about the introduction of dribbling and passing, effected a great improvement, is on all hands admitted, but whether the addition of a fourth three-quarter has been beneficial to the play is a matter which has been very hotly debated.

Hints on the Game—The first lesson to be appreciated is that the whole tendency of the modern game has been to convert the component parts of a football team into a well-regulated machine, and that it is on co-ordination, rather than individual excellence, that success depends.

The first step must be the choice of a definite style. You may elect to play a fast game or a slow one, a passing or a dribbling one, but, if your tactics are to be successful, your men must from the very first understand what the style is to be, and one and all must co-operate in carrying it out. Your selection will, no doubt, in a large measure be determined by the material at command, and you will have to consider whether your men are best adapted to a fast or slow game, or to a foot or hand one.

The Selection of Teams—I hold a very strong opinion that the fewer engaged in this task the better, and I have a firm belief in leaving the matter in the hands of the captain or secretary, if those officials are competent judges of play. The greater the power you vest in them, the more likely they are to realise their responsibility, and the greater the interest and work which they will devote to the management of the club. With a numerous selecting committee, on the other hand, you simply arrive at the resultant of divers opinions; and under such circumstances you are not likely to develop a homogeneous fifteen or unanimity of style.

It is always advisable, where possible, to keep a second fifteen in competition with the first. There is no such stimulus to a man's play as the knowledge that his place is not secure. This is year by year demonstrated by the University fifteens, who invariably play a very much harder game before the 'Varsity match, when each player is fighting for his blue, than they do after the Christmas vacation.

The Captain—On the shoulders of the captain falls the whole management of a team. The question of the selection of captain becomes, therefore, one of most vital importance. The custom prevails of electing to the post the oldest player. This I regard as a great mis-

take. In my opinion the man best qualified to discharge the duties of generalship ought to be selected, irrespective of any claims of seniority which another candidate may possess.

It goes without saying that he must be a popular man, but his popularity must not prevent his being a determined autocrat, whose word must be absolute law. He must possess a thorough knowledge of the game, insist on the observance of the strictest discipline, and never flag in his efforts to infuse enthusiasm and maintain vitality.

On the field his duties will be (1) to select the style of play, and see that its essential points are observed. (2) To correct mistakes. A man who indulges in a bad bit of play should be immediately reprimanded. (3) To keep his side together and at high pressure by continual exhortation, picking out the slackers for his censure, and rallying his side when it shows signs of going to pieces. (4) To preserve silence. All talking must be peremptorily stopped. It is a pure waste of energy, disorganises the game, and generally leads to wrangling. The captain is the only man who has a right to talk. (5) To watch most carefully the manœuvres of his adversaries, and endeavour to checkmate them by counter tactics. (6) To see that every player of the opposite side is marked by one of his own on the line out. This is most important.

From these suggestions it will be at once apparent that it is best to have as captain, if possible, a player outside the scrummage, inasmuch as in that position he has a better opportunity of seeing exactly how the game is going.

Method of Play—Passing—The whole tendency of modern play has been to make the game more fast and open, and the main factor in the transformation has been passing. But though this art has undoubtedly placed a very great premium on speed, it must not be forgotten that dribbling, though not so effective on a dry ground, or so attractive from a spectacular point of view, possesses nevertheless the advantage that it is practicable under any conditions of weather, whereas a greasy ground, a wet ball, or a boisterous wind render passing a matter of great difficulty, and sometimes an impossibility. Every club should be proficient in both schools of play.

The following are the axioms of passing :—

1. The one object is to transfer the ball to one of your own side who is in a more advantageous position than yourself.

2. It follows as a rider that, unless there is some one in such a position, you must on no account pass, but must stick to the ball yourself, inasmuch as passing at all times involves a risk, which, unless there is a palpable advantage to be gained—and in this case there is none whatever—ought not to be run.

3. For the same reason no one must ever pass *within his own 25 yards line*. N.B.—This golden rule is being continually transgressed, and I have often seen International players offend. A captain cannot be too severe on the transgressor.

4. You must pass at the most opportune moment, *i.e.*, when you have made the pass a certainty, and at the very moment when most can be gained by it.

5. The pass must be low, quick, clean and (where practicable) as short as possible. High slow passes are liable to be intercepted, while short ones are obviously very much more safe and accurate than long.

6. It follows from the above, that players should back up as nearly level and as close as possible to the carrier, and that the backing up should be done broadcast and towards the open. These remarks do not, of course, apply to a long pass by a half to a three-quarter back, and by a centre three-quarter to his wing.

7. Never call for a pass unless you are in a palpably better position than the carrier. At the present time a most pernicious practice exists of almost everybody in the vicinity of the carrier shouting for a pass. Now only one of this chorus can be the proper person to whom the pass should be made, and he is the player in the most advantageous position in relation to the runner. A captain ought to put his foot down at once on this silly abuse, which only bewilders the carrier, or brings him to a standstill in uncertainty as to what he ought to do.

8. The practice of feinting, which might be described as passing by not passing at all, is a most effective practice, but it requires the employment of great judgment as to when it should be resorted to, and a capacity to take in the situation in the twinkling of an eye. No definite law can be stated on the subject, which must be wholly governed by the circumstances attaching to the particular incident of play.

The carrier of the ball feints to pass, and so perplexes the would-be tackler and decoys him to the player to whom he imagines a pass has been made. In such a case the carrier secures an open field for himself.

It will be convenient here to consider what, under these circumstances, the tackler ought to do. He should most unquestionably invariably go for the carrier of the ball. It must be remembered that he is one against two. If he makes for the player who, he thinks, is about to receive the ball, he is bound to leave an open channel at the disposal of the runner, while he himself tackles nobody at all. If, on the other hand, he goes for the carrier, he at any rate forces his hand, and either tackles him with the ball, or compels him to make his pass. In this case he has rendered a service to his side, in the former to his adversaries.

Too much stress cannot be laid on this very

important point. I have constantly seen men wavering and hesitating as to which of the two they ought to make for and finally fall between two stools and go for neither. I would remark, moreover, that, even where there is no feinting done, it is the practice of the majority of centre three-quarters, when the opposite centre is running, immediately to deploy to the wing three-quarter, taking it for granted that the ball will be passed out. This is a very great error indeed, and it can be laid down as a hard and fast law *that it is the duty of every three-quarter to devote his attention primarily to his vis-à-vis.*

Lastly, passing is, in my opinion, greatly overdone, and in minor clubs the science is frequently burlesqued. A great many men appear to be imbued with the idea that they ought to get rid of the ball the moment they get it; so that one sees runners not sprinting or dodging, but going half speed, and looking first on one side and then on the other for some one to pass to. The consequence is that the ball very often passes through a dozen hands in a stationary position, and at the end of a pretty piece of leger-demain things are as they were, and the performers are no better off than when they started the manœuvre. I most strongly advise that a player receiving the ball should sprint ahead at full speed without hesitating or looking round, until he sees a risk of being tackled, and that then, and not till then, he should pass to the most advantageously placed player, who, if the backing up has been done in the proper manner, ought to be near him and on the open side.

Dribbling—Much that has been said about passing applies to dribbling. It is an art which can only be acquired by the most assiduous practice; and it must be recollected that what you want is combined and concentrated, and not isolated, dribbling, which is easily checked, and therefore not of great value.

The following are the most important rules:—

1. You must not be in too great a hurry in dribbling the ball, or you will be sure to overrun it. A Rugby ball does not roll with the accuracy of an Association one.

2. A player should thoroughly understand how to pass by the foot, and here the axioms enumerated with regard to passing by hand would apply to a very large extent.

3. A player should be able to use the outside as well as the inside of his foot, so that he may be able to pass right or left as occasion requires.

4. As in passing by hand, the forwards should back up the dribble broadcast, and on the side to which the ball can be most advantageously transferred.

5. When a half or three-quarter back is in a good position in the open to score, the dribbler, if he be sufficiently skilful to make a long pass, should shoot the ball across to him immediately.

6. A half-back should not make a practice of dribbling. It may pay occasionally, but you will generally find that the half-back who habitually dribbles is apt to neglect the feeding of his three-quarter backs, and cannot stop a rush of forwards, because he seldom picks up the ball, and cannot do it on an emergency.

The fact that there is not merely so much dribbling now as there used to be is probably due to the greater popularity of passing by hand. At the same time there is no saying what a team which had brought to perfection the art of combined dribbling might do.

In some clubs the catcher of the ball from the throw out immediately drops it, and starts a dribble, but this device, for success, requires

A Forward Dribble.

a previously understood concerted action amongst the forwards, and is by no means easy to accomplish successfully.

Judgment Kicking—I should mention that the Yorkshire forwards do not go in for dribbling, but for what is known as "judgment kicking." This consists in kicking the ball just hard enough to stop between themselves and the nearest half or three-quarter, and then following up at full speed, in order, if possible, to reach it first and to prevent their opponents from picking it up. Another variety of it is a long oblique kick to some unprotected part of the field with the same object. This device is all very well when it succeeds, but the kick must obviously be very well judged and directed, and is just as likely as not to go too far. On the whole, I think that dribbling is by far the soundest, and, in the long run, the most paying game.

Departments of Play—Forward Play—Pace, dash and skill, when combined with weight and physical power, are important attributes of a good forward, but the most valuable of all qualities is that of hard work, and you will do well, therefore, to impress continually upon your men that, whatever else they may be able to accomplish on the field of play,

they must be able at any rate to play hard. It is very much wiser to have your team composed of men who play resolutely in any kind of game than of those who are brilliant and who figure conspicuously when they win, but fail when you have a beaten side.

One may take it as a hard and fast rule that one never should pick a loafer, no matter how brilliant a player he may be, for it must not be forgotten that his share of the hard work has to be done by the rest of the team, and that he is a source of weakness on defence.

There are two phases of play (1) play in the scrummage, (2) play in the open.

Scrummaging—The first great lesson to be appreciated is that all the pace and skill in the world are useless unless you hold the scrummage. This is, indeed, a golden axiom. Back players *must* have room, but if your forwards are routed, they are swamped and never have an opportunity of getting off, while the opposing phalanx sweeps all before it with the force of a torrent.

It follows that (1) You must have a sufficiency of scrummage work. (2) The best team is the one which combines this sufficiency with pace in the open.

The present fashionable methods of scrummaging are (1) wheeling or screwing, and (2) heeling out. The old practice of pushing straight ahead may be said to have fallen into disuse, for the time being, at any rate, if not for ever.

Wheeling—The means employed in wheeling are not strictly within the letter of the law, inasmuch as during the process the bulk of the scrummagers are off-side. The practice has, however, been admitted by tacit consent, and may be said to have become legitimate.

The essence of the science consists in your own forwards obtaining possession of the ball in the scrummage, and withdrawing it behind the first or second row of scrummagers, where it lies safe from the interference of your adversaries, who are thus prevented from executing a similar manœuvre. Here it is nursed by careful manipulation till it is seen in which direction the bias of the scrummage is tending, and an opinion can be formed whether it would be better to execute the wheel to the right or to the left. When this point has been ascertained, the wheel is made on the most favourable side by the back row bringing the ball round to the front, while the front row slide off their adversaries.

If you are going to wheel, then, (1) you must be the first to get possession of the ball in the scrummage. This is a *sine quâ non*. (2) You must immediately pull it back behind the front row of scrummagers, so that it will be safe from the interference of your adversaries, and you may execute your manœuvre in secrecy and unmolested. (3) You must nurse it skilfully, holding the scrummage at the same time, of course, till the moment for wheeling arrives. (4) You must wheel to the side on which you can best screw off your adversaries, and then rush ahead with the ball.

From the above it will be gathered that the manœuvre is by no means easy of execution, and as a matter of fact there are not many teams which can accomplish it with precision. With very few exceptions the International teams of the last few years have more often than not failed in their attempts to bring it into play. Like most other fanciful manœuvres it is very dangerous when it fails. The mistake which most sides make in attempts to employ it, is leaving the ball behind in their hurry to wheel. As a consequence, they make a present of the ball to their adversaries with a fair field in front of them, since they themselves, by screwing off their opponents, are now behind them, and off-side as far as the play is concerned. The greatest precaution must be taken to see that the ball is brought on by the wheelers, or the result is bound to be disastrous.

I am personally of opinion that a very much sounder method would be to pull the ball back, and then push straight ahead in the old-fashioned style. This possesses the advantage of being absolutely safe, and it is a surprise to me that no team as yet has adopted it. Any side which did so would meet with astonishing success in these days, when straight-ahead propulsion has become a dead letter.

Heeling Out—The art consists in this:—The heel out is not executed the moment the scrummage is formed. This would be too transparent a device. Possession of the ball must first of all be obtained as in wheeling, and the forwards must from the very commencement of the scrummage push their utmost in order to convey to their opponents the idea that they are trying to carry the pack and so mask the manœuvre. When they are actually pushing their opponents is the moment when heeling should be done.

Both wheeling and heeling are strategies which are distasteful to players of the old school, but they have without doubt become part and parcel of the game, and no side which is not versed in them would stand a ghost of a chance with one which is.

As regards scrummaging generally, the following points are of the highest importance. (1) Be the first to form the scrummage and pack quickly. This is half the battle. (2) Get the first push. The whole momentum should be applied the very instant the ball is put down. The above are the means by which what is termed "rushing" a scrummage is effected. (3) When you find yourself on your opponents' side of the scrummage and in front of the ball, get round immediately and reform. Too much stress cannot be laid on this last point. As a rule, forwards of the present day are apt to wait

for the ball to overtake them instead of running round again immediately, and filling the breaches in the forward ranks. If under such circumstances the opposing side happen to get on a rush the result may be very serious. (4) Form a compact scrummage with the heads down. Long and straggling packs are easily broken through, and, moreover, do not admit of any of the manœuvres before detailed with reference to wheeling and heeling. (5) Never kick a ball forward in a scrummage. By so doing you lose it yourself, and hand it over to the control of

A Tight Scrummage.

your adversaries. (6) Always keep your eye on the ball in the fight, so as to detect the progress of your opponents' manœuvres. (7) The half backs should keep the forwards informed of the locality and movements of the ball in the pack.

Open Play—When once the scrummage is broken up, the first great secret of open play is to break away quickly and follow up at full speed. This should be sprinting, and not the trotting which we so often see. There is nothing more important than quick following up, and it should be done *en masse*, and not singly, so that five or six men, and not one only, are on the spot to tackle an adversary who gets the ball. Passing and dribbling I have already dealt with, so that I will say no more about them here, merely remarking that they are accomplishments essential to a good forward. Picking up by forwards should be discouraged, since it spoils the rushes.

One of the most important items of open forward play is the line out from touch, and I have found that in this it very much assists men to have their accustomed places, some near in, and some far out from the touch line.

Each of your forwards must mark one of the opposite side. Many a try is lost through leaving a man unmarked, and so allowing him to get away. This occurs over and over again even in the very best matches, and a captain should always keep a watchful eye on the line out.

Finally, a forward should be a sure and determined tackler, and recollect that even if he cannot nail his man, he is hampering his movements by going for him, and that by following him across the field after he has missed him he is narrowing his margin of open ground. If a forward misses his man, he should not give up, but follow in hot pursuit, for he may get him from behind at the next check.

Half-back Play—Imprimis, and above everything else, a half-back must realise that he is essentially a conduit pipe between the forwards and three-quarter backs, and that it is for the latter and not himself that he must mainly shape his play. This conception of his character originated the art of what is commonly known as "feeding," an innovation which has revolutionised the game. It is, therefore, necessary that a half-back should be intimately acquainted with this science; otherwise, he is wholly unfitted for the post.

There are two styles of "feeding": (1) stationary, *i.e.*, when the half passes the ball to the three-quarter the moment he receives it, without running himself; (2) when he runs himself, clears his *vis-à-vis*, gets his three-quarter on his legs, and nurses him till he gets an opportune moment to make his pass. The latter is undoubtedly the more efficacious way of proceeding, but it must be remembered that a half has not always time to carry it out, as for instance when his *vis-à-vis* is almost on the top of him, or when he is in front of his opponents' goal, and not a moment is to be lost. In these cases the half, if he passes at all, must do so immediately. To which of the three-quarters he will pass will depend on his judgment and the circumstances of the case, but it is best to pass to the centre, when possible, for he is in a better position to develop the game than a wing, whose field of operations is curtailed on one side by the touch line.

The most skilful passer, however, will be no good unless he is quick on the ball, for if he is not, his *vis-à-vis* will invariably get it before him. This opens up the question as to how far from the scrummage he ought to stand; and on this point, in my opinion, no hard and fast law can be laid down. Some great players have been in the habit of standing a long way off, while I have seen other famous ones stationed right on the fringe of the pack. Standing some distance off undoubtedly gives you more room when you get the ball, but on the other hand you are not so likely to get it as if you were standing nearer in, and, both in the matter of stopping rushes and getting on to your *vis-à-vis*, you are at a disadvantage. The precise spot should be that which a player finds best suited to his style.

A third essential for a half is a capacity to tackle and stop rushes. He must keep a vigilant eye on his *vis-à-vis*, and be ready to nail him the very instant the ball comes to him; and when his adversaries are making a dribbling

rush he must throw himself fearlessly on the ball.

Fourthly, a half should be a good kicker, so that he can relieve his side by sending the ball

STOPPING A RUSH.

into touch when on defence. For this purpose screw-kicking is especially useful.

Fifthly, as the duty of throwing the ball out of touch devolves on the halves, every half ought to be a long and accurate thrower.

Co-operation of the two Half-backs—A most effective game can be played by the co-operation of the two halves in the employment of cross passing. For its accomplishment it is necessary that there should exist between the two a most complete understanding, and an intimate knowledge of each other's play, together with complete unselfishness. The method is this. When the ball comes out to a half on one side of the scrummage, he immediately throws across to his colleague, and *vice versa*. The essence of the theory, of course, is that it changes the tack of the game, and that the play is suddenly transposed from one side of the scrummage to the other, while the stream of players, who have brought the ball through, remain where they were. The *vis-à-vis* of the half-back who originally received the ball is thus prevented from tackling him, while his colleague, if the pass is a swift one, is probably not yet ready to tackle, or is possibly in ignorance of the fact that the pass has been made. The half, therefore, who has received the cross pass, is thus able to transfer to his three-quarter unmolested. It is a strategy most excellently employed when the play is near touch, and there is no margin between the scrummage and the touch-line in which to develop the game. Then, if the ball comes out to the half on the touch-line, he can, by throwing across to his colleague, immediately transfer the play to the open field. In point of defence, moreover, it is of very great value. When a half, for instance, gets the ball, and sees that there is no possible chance of his escaping being tackled by his *vis-à-vis*, who is close upon him, he can get out of the difficulty of the situation by a cross pass. The game of co-operation has come to be so generally recognised as the one to play that, in choosing half-backs for great matches, an inferior club couple are often preferred to two better individual players in order to preserve the combination.

Another innovation of recent years is the practice of one half taking the scrummage, while his colleague stands back between him and the three-quarters, an intermediary, as it were, between a half and three-quarters. The half who is on the open side of the play is the one to stand back, and the other takes the scrummage. The object in view is to facilitate the transit of the ball to the three-quarters by the agency of short passing. It is most important, however, to bear in mind that these tactics are only to be employed in offence. When on defence it is absolutely imperative that both halves should resume their usual position, *i.e.*, both take the scrummage for the purpose of stopping rushes and tackling their opponents.

Three-quarter-back Play—There are two systems of three-quarter-back play: (1) three three-quarters; (2) four three-quarters. Opinions have differed widely as to which is the better method, but after a prolonged controversy, throughout which England, Scotland and Ireland persevered with three three-quarters as against the four of Wales, the system of the latter has gradually made headway, and is now the more generally accepted.

It is important to note the fact that in the days of the old straightforward pushing the four three-quarter game was a failure, and year by year Wales paid the penalty for the innovation by disastrous defeats in International matches.

It has been contended (1) that eight forwards cannot hold their own against nine; (2) that the ground is not broad enough to give room to four three-quarters.

With regard to the first contention, I would remark that under the altered conditions of forward play, which heeling and wheeling have brought about, the theory that nine forwards are bound to rout eight is a fallacy. Nothing of the sort occurs. The fact is that the whole character of forward play has been altered by these innovations, and that scrummaging has become rather a question of finesse and manœuvre than of weight and physical power. Under these circumstances it is very obvious that the value of the ninth man in the scrummage is not what it used to be under the old régime. Then I admit that nine would have routed eight, but under the present method of scrummaging I am sure that they do not.

Assuming that eight men under the altered state of things can hold nine, is it not patent that an extra man at three-quarter is a manifest advantage both from an offensive and defensive point of view?

In the first place he strengthens the defence, for four men must of necessity be more difficult to get through than three—in fact I would go so far as to say that in the present state of things three are unable to hold four in check, unless the four three-quarter side are utterly broken down forward.

Secondly, it is clear that he contributes to your offence. His presence brings into play short passings, which is a great deal easier, and at the same time more precise than long, and his introduction admits of very delicate co-ordination, which, if brought to any degree of perfection, is difficult to break down.

In addition to this, whenever one of the four gets the ball, he is, *cæteris paribus*, at an advantage of two to one as regards his *vis-à-vis*, and it is, to my mind, an utter impossibility for one man to stop two. Supposing, we will say, one of the centres on the four side gets the ball, and that the centre of the three side goes, as he is bound to do, for him. He immediately, of course, passes to his fellow centre, for whom the wing on the three side must now make. The centre on the four side straightway passes to his wing, who has a clear field in front of him, for, the wing of the three side being already employed, there is no one left to stop him.

As regards the breadth of the ground, I would point out that the four game is a wholly different one from that of the three. In the former the three-quarters run straight, in the latter they run round, so that the four do not require an inch more latitude than the three.

Under the present phase of forward play, therefore, I am strongly of opinion that it is essential to play four. That the system substitutes machinery for individuality, and that it does not, and never will, produce players of the same ability as the three game I at once admit, and if you were to take some of the present famous four three-quarters and put them in a three game, you would find them most inferior players, because they have become accustomed to devote the whole of their attention to one department of the game only, *i.e.*, passing, in order that they may convert themselves into a component part of an elaborate machine, and are wholly devoid of resource.

If a radical change comes about in the forward play which will restore to weight and physical strength their premium,—a change which may occur any day,—then the three game will once more be universally adopted. There can be no question that the three game is an infinitely superior school wherein to train a young player, and it is a matter of congratulation to know that our great public schools, which are nurseries for the supply of our best talent, still adhere to the three game, except on the occasions of matches with outside clubs. The three game is, therefore, still very largely played, and I accordingly give the principles which govern it.

Three Three-quarters—The Centre—A centre is the correlative of the half-back, and as the latter has to play, not for himself, but for the men behind him, in the same way a centre has to make the game for his two wings. Every word which has been written about the opportune passing of a half to a three-quarter applies to the passing of a centre to his wings. Thus it will sometimes be his game to pass out at once without running himself, at other times he will be able to nurse his wings and get them well on their legs, passing at the exact moment when they will have the best chance of scoring, and again, at another time, he may resort to feinting, and, if he can secure a clear passage thereby, run in himself.

The other essentials of a centre are that he should be a sure kick and tackler, and a fearless stopper of rushes. These are most indispensable qualities, inasmuch as the burden of the defence will rest on his shoulders. The rushes, as a rule, fall to his share, and when in his own twenty-five, or at a moment when he cannot pass or make headway himself, he will be bound to kick. Though it may be safely said that all three-quarters ought to be good tacklers and kickers, this is essentially the case with the centre, so that efficient kicking in this position is absolutely necessary. And here I would remark—and this applies to kicking by halves and full backs—that every kick should reach touch. In this respect the modern generation has steadily deteriorated, for the reason that an enormous amount of attention is paid to passing, and kicking is consequently comparatively neglected—indeed, one might almost say that accurate kicking into touch is a lost art.

The centre will, of course, be on the look-out for a drop at goal, if he is an expert at this, but it is not good play to drop at goal when a judicious pass can make a try a certainty. When near his adversaries' goal, it is advisable for the centre to move up nearer to his halves, and to bring up his wings with him, so that he may be in a better position to take a pass and in quicker time.

The Wings—The modern game has placed a premium on speed, and it has consequently become the custom to place sprinters on the wing. By this I do not mean to say that other qualities, such as kicking and tackling, are not desirable, but only to point out that either speed or dodging powers are absolutely requisite in this position. All that has been written about the kicks of a centre reaching touch applies equally here.

When the centre is running and nursing the

wing, the latter must back him up in the position which will make the pass easiest for him. The dividing distance, however, must depend wholly on the situation.

The wings must be careful not to close in towards the scrummage, and so run the risk of being outflanked by their opponents; in fact, each three-quarter should keep exactly opposite his *vis-à-vis*, and on no account come nearer towards the scrummage than the latter does.

All three-quarters should go to the assistance of the full back in cases of emergency. This applies most particularly to cases where (1) a back has run in front of the three-quarter; or (2) has followed up his kick. In both these cases the post is undefended, and a three-quarter should drop back immediately.

Four Three-quarter Back Play—As previously remarked, the four three-quarter game is of a totally different character from the three. In the latter, as we have seen, the single centre nurses his wings and passes at the most opportune moment, but in the case of four we have two centres and the method employed is that of short passing. The running is not nearly to the same extent across the ground—in fact the field of play is not sufficiently broad to admit of this in the case of four—but very much straighter. The game is an elaboration, on a more precise scale, of the short passing of the forwards which occurs when they back up one another broadcast. The quartette, during a run by one of them, preserve their relative positions, advancing parallel.

The passing is done when the carrier is in full swing, and is of a to and fro character. The receiver of the ball, for instance, starts off at full pace; the other three back up symmetrically. The carrier, either when he finds himself menaced by an opponent, or when he sees an advantage to be gained thereby, makes his pass, and the receiver under similar circumstances re-transfers and sends the ball, if he be a centre, either back to his fellow centre or out to his wing, who, when he has exhausted his margin, and is hedged in on the touch line, once more returns it to the passer. Thus, by a series of short and machine-like passes and repasses, employed whenever an obstacle presents itself, each would-be tackler is outmanœuvred. Or, to take another case, a centre gets the ball and passes to the other centre. The impression probably prevails that this centre will pass to his wing, and the defending side deploy in that direction. Instead of this, however, the last carrier re-transfers to the first, who now has a clear field in front of him and runs down the unprotected channel.

It will be easily understood that this is a system which requires infinite practice, a thorough reciprocity of style, and a great deal of head work. The whole success depends on whether or not the passing is done at full speed. It is because English, Scotch, and Irish clubs have failed to appreciate this fact that they have so far been unable to master the art.

A manœuvre which has of late years been considerably employed by three-quarters, who are clever kickers, is the following. The three-quarter on receiving the ball drops or punts it obliquely across the ground to some unprotected part of the field, and then running straight ahead at full speed puts his forwards, who are on the side of the ground where the ball has landed, but who were off-side when he kicked, on-side. It is extremely effective, but it requires a very accurate kicker.

And, lastly, another bit of finesse employed with considerable success by some three-quarters is the practice, when they have run up close to the full back, of punting over his head with a very gentle kick and then racing for the ball. The back has, of course, to turn while the three-quarter is already moving at full speed, and consequently has a great disadvantage in starting.

Full Back Play—The post of full back in a four three-quarter game is the most difficult on the field. On his shoulder rests enormous responsibility, and it is not easy for him to decide where to take up his position. The first point to be considered is: where a full back ought to stand as regards his three-quarters. Practice alone will teach him the proper spot, and I can merely broadly state that it should be as near the three-quarters as the range of the opponents' kicks will permit, but it must on no account be so close in that these pass over his head. Next comes the question: what is he to do when the three-quarters, with a bout of passing, are bearing down upon him? All he can do is to watch for the final development of the passing, and then without hesitation go for the carrier. If the latter passes again this cannot be helped. What he must realise is that, if he shows the smallest hesitation, he is lost.

In the case of a dribbling rush he must on no account keep on retreating before the attacking phalanx, as is the custom with so many players, but he must rush in boldly, and either pick up (if he can) or fall upon the ball.

The essentials of a full back are that he should be (1) a good tackler; (2) a long and accurate kicker.

If a team does not possess a player endowed with both these qualities, and the question arises as to whether the tackler or kicker should play, preference should undoubtedly be given to the former, for not only is he more likely to be of service in the moment of extreme peril, but the three-quarters will play with a great deal more confidence when they know that they have a reliable tackler behind them.

It will be obvious that what has been said about kicks reaching touch applies to the full back more than to any other player, seeing that he is the last defender, and a kick by him into

the open might lead to disastrous consequences. For this reason a full-back should be able to kick with either foot. If he can only use the right, he is in a dilemma when he gets the ball on the right side of the ground. Secondly, if he cannot make a certainty of his kick when surrounded by his adversaries near his own goal, he must hold on to the ball and be tackled.

The question of following up his own kick for the purpose of putting his players on-side is a vexed one. In my opinion it is a very hazardous proceeding, for if the ball happens to be returned immediately there is no one there to receive it, or, if an adversary gets by the three-quarters, there is no one there to tackle him, unless one of the three-quarters has dropped back to fill the vacant post, which, of course, it is his duty to do.

General Play—Tackling—No bettter advice can be given to a player, who is about to tackle, than that which one so often hears on the football field, *i.e.*, "go low." The ideal tackle is an octopus one, which holds both the player and the ball in an iron grasp and so prevents the possibility of a pass. If, however, a player is not an adept at this, and very few are, his next best plan will be to aim at the hips or knees and swoop on the adversary with sufficient impetus to bowl him over, and so prevent the pass. The whole secret in tackling, it should be remembered, is that it must be done with resolution and without the smallest hesitation.

Some General Hints—If you win the toss, always take the wind, which may drop at any time, and frequently does towards sunset; and, again, if you win the toss, always play with the slope to begin with. A score in the first half of a game inspires confidence in your side, and demoralises your opponents.

At kick-off and kick-out see that none of your own side get in front of the kicker. If they do, the advantage of the kick is lost, and a scrummage is formed midway between the touch-lines, either at the halfway or twenty-five yards' flag.

When your opponents kick off, draw out one of your forwards, who can drop-kick, and station him some fifteen yards behind your own forwards, so that he may frustrate the tactics of a short kick over your forwards' heads, which your opponents hope to reach before your halves or three-quarters can do so.

Select a regular place-kicker and placer. The placing of the ball is quite as important as the kicking. The placer must be acquainted with the kicker's taste with regard to the position of the ball on the ground.

In short kicks, the kicker should not rush at the ball. Two strides and a well-aimed kick are sufficient; in fact, it is often better to stand on one leg and lob the ball over the cross-bar with the other.

Many captains adopt the plan of pulling out a man from the scrummage for the purpose of defence, when the enemy is near the goal-line. This is a very great mistake. Forwards in their own twenty-five are always more or less demoralised. In this predicament you want, above all things, to strengthen your pack. If you weaken it, the enemy comes through pell-mell, and your back players are swamped. Withdrawing a forward is nothing less than detracting from the strength of your essential defence at a critical moment.

Always make your mark from a free catch, no matter how near you may be to your own goal, if your opponents are close upon you, and either take the kick yourself, or employ the best place kicker of your side to send the ball into touch out of danger.

CONVERTING A TRY.

It is better at kick-off or kick-out to kick high rather than long, so as to enable your forwards, by following up fast, either to reach the ball before their adversaries, or to tackle the catcher the moment he receives it.

A. BUDD.

ASSOCIATION FOOTBALL—**The Goalkeeper** is the last defensive resource on a side. By the rules of the Association game he is allowed to use his hands to play the ball anywhere in his own half of the ground. As, however, his duties are purely defensive, he, practically speaking, never uses his hands except in defence of his goal, *i.e.*, to prevent the ball passing between the two upright posts and under the cross-piece. The only case where a goalkeeper can be said to take part in the attack is when the ball has been considerably overkicked towards him by the opposing side; then he runs out, picks up the ball and punts it so as to place it as conveniently as possible for his forwards to carry it on towards the adversaries' goal.

The two chief duties of a goalkeeper are: (1) to prevent the ball passing through the goal; (2) to kick off the ball when it has been sent

behind the goal-line by one of the opposing side.

Of these two duties the former is by far the more important; the second is frequently performed by one of the backs. But if the goalkeeper can kick off well, he saves the backs a somewhat tiresome duty and gives them a brief spell of rest which they often need.

In kicking off, low, long kicks are better than those that soar high in the air, because the former come more conveniently to the forwards, and the latter are more easily dealt with by the opposing half-backs and backs. When the wind is blowing against the kick it is essential to "loft" the ball as little as possible. Sometimes, when the wind is very strong, it pays to kick off right along the ground, provided always that one can see a space between the opposing forwards wide enough to allow of the kick travelling well down the ground. Usually, the best kick-off against the wind travels a fair distance without rising more than ten or twelve feet into the air. In order to bring off these difficult kicks, it is necessary to kick the ball as much as possible with the instep, and not with the toe, which should be pointed well down, and to get the body somewhat over the ball. Experiment will suggest the best method. It is probably more difficult to keep a long kick low, if the ball is stationary when kicked, so it sometimes pays for the goalkeeper merely to pass the ball to one of the backs. If this be done, care must be taken that none of the opposing forwards are lying up close to the back. The only occasion on which much is to be gained by this trick is when there is a wind against one, and it is precisely then that the opposing forwards are likely to stay rather near the goal. This method of kicking off should never be adopted except when the back is sure to be able to get the ball easily, and to have plenty of time. A mulled kick-off is dangerous to your charge, and exasperating to the rest of your side. One of the backs should take the kick-off if the goalkeeper is a weak or erratic kick.

It is somewhat difficult to place a long kick, especially when the ball is stationary before being kicked; but one should aim at sending the ball to a forward who is unmarked and in a good position for getting away. It will usually be found that it pays to kick out to the wings rather than towards the centre of the ground. The outside forwards generally have more room than the insides or centre, and it is more difficult for the opposing half-backs and backs to get the ball to their own forwards from the side of the ground.

To defend a space twenty-four feet broad and eight high against every conceivable kind of shot from all directions except from behind is not an easy task. Few can do it with even fair success.

A goalkeeper requires great quickness of eye and hand, and considerable activity and strength. He must be cool and full of resource. And if he is to be really great, he must have the instinct of knowing where the ball is coming.

Various shots have to be stopped in various ways as occasion demands. There are three ways of dealing with a shot successfully: (1) the ball may be *caught* and then got rid of by a throw or punt; (2) it may be *punched* away; (3) it may be *kicked*, the hands not being used.

The first way is by far the safest, and therefore best. Whenever possible, the ball, whether it come high or low, to the right hand, left hand, or straight, should be caught with both hands. When there is time, a long punt towards the side of the ground pays best, because it gains most ground and is likely to go out of the way of the opposing half-backs and backs. When pressed, a goalkeeper should throw, or rather sling, the ball away as far as he can, taking care to send it to the side rather than straight down the field, and to one of his own men. Sometimes a goalkeeper has time to catch the ball, but not to sling it deliberately; indeed, he often can do nothing but pop it over the head of an assailant and trust to some one of his own side getting to it and relieving the pressure. In order to be able to dispose of the ball advantageously on the spur of the moment the goalkeeper should get into the habit of observing exactly where the various players are, so that he can unhesitatingly send the ball where one of his own side is in a good position to receive it.

Some goalkeepers are in the habit of getting rid of the ball in another way. After catching it, they toss it slightly from them and *punch* it away with either an overhand or underhand swing of the hand. They find they can send the ball farther by this method than by throwing. But the throw is much safer. In punching a ball you can never be quite sure where it will go.

The second method of dealing with a shot, *i.e.*, by *punching* it as it comes, without catching it, is exceedingly brilliant, and must often be adopted when there is no time to catch the ball or when it cannot be reached with both hands. There have been very fine goalkeepers who always punched in preference to catching the ball. But for obvious reasons—principally because two hands are better than one—the latter method is by far the safer. It is particularly risky to punch at a slow dropping shot, especially when the wind is causing it to swerve or curl. A goalkeeper who punches at and misses such a shot looks very ridiculous. The only shot that should be punched away is one that cannot by any means be caught with both hands. Of course a punch is a quicker process

of getting rid of the ball than a catch and throw, so, when the ball has to be cleared very rapidly for fear of the goalkeeper being rushed through the goal, ball and all, he may be justified in punching. But a clever goalkeeper can nearly always dodge the opposing forwards if he can get the ball fairly into his hands, especially now that it is illegal to impede or charge the goalkeeper before he touches the ball. Before the rule on this point was framed as it is now, the goalkeeper used often to have to wait for a dropping shot with several forwards hustling him; indeed, he was not unfrequently charged through the goal just a fraction of a second before he could reach the ball. Then was often a case of punch or nothing. Now a goalkeeper can take his time with long shots. Be careful never to punch a ball straight into an opponent who is charging you down.

The third method of clearing goal, *i.e.*, by *kicking* the ball without using the hands, should never be adopted unless the shot is so close and so fast and so low that it is impossible to bend down in time to use the hands. A long shot along the ground should always be gathered with both hands, and then punted or slung away. Nothing is more reprehensible in a goalkeeper than taking wild, flying kicks or, indeed, using his feet in any way when he can use his hands. Still, as occasions do arise when a kick is the only means of stopping the ball, a goalkeeper should practise kicking so as to be quick and sure with either foot. A low crossing shot into the corner of the goal may often be turned just outside the post by a deft "spread-eagle" kick.

In picking up a low shot, the best method is to face the direction from which the ball is coming, with the lines of the shoulders and hips *at right angles* to the line of flight of the ball. The feet should be kept close together. The goalkeeper should then stoop with his arms between his opened knees, and should field the ball as in cricket.

In a similar way, when the shot is higher from the ground, the safest method of taking it is facing square with the flight of the ball, so that some part of the body is behind the hands and arms when the ball is caught. Thus, when the shot comes from the side, the goalkeeper should be facing square towards the kicker, and not towards the other goal.

The safest way of dealing with a hard, high shot is to give it a tip up over the bar with both hands. This concedes a corner kick to the other side, but is better than risking a wild punch. However, a tall, active man can catch almost any shot that would go under the bar. A shot that is passing just under the bar can usually be jumped at and caught with safety if it is dropping at the time; but if it is still rising in its flight it is difficult to catch, and is more safely treated by being pushed up over the bar. A goalkeeper who has confidence and skill can punch away many high shots, but there is always the risk of missing the ball or sending it to one of the other side.

There should always be a complete understanding between the goalkeeper and the backs, so that he on his part and they on theirs know exactly what to do and what not to do. It is nearly always best for the goalkeeper to claim and take any long shot that is dropping into the mouth of goal, because he is at liberty to use his hands. When there is a crowd round goal, the backs are often unable to kick without sending the ball against an opponent; but the goalkeeper, if he can get hold of the ball, can throw it away over the heads of the attacking party. Round goal the goalkeeper should, therefore, try to get the backs to play to him and should shout to them decidedly whenever he sees he can deal with the ball.

When the ground is wet, most goalkeepers wear woollen gloves or mittens, in order the better to grasp the greasy ball. These gloves should not be too thick, or they are liable to be an impediment.

A goalkeeper should take care to keep warm when unemployed, as it is impossible to use the limbs with rapidity and certainty if they are chilled. Cold hands will not catch.

It is often very slippery in goal, so it is a mistake to be careless about the knobs or bars on the boots.

The Backs—The general practice nowadays is to have two backs, whose sphere of action is in front of the goalkeeper and behind the half-backs. But there is no rule to prescribe any particular arrangement of the eleven men on a side—except that only one goalkeeper is allowed. Sometimes, when a side is a goal or two ahead, and it is thought advisable to play a purely defensive game, a third back is added by diminishing the number of forwards. Experience, however, has proved that the division of the side into two backs, three half-backs, and five forwards works best. In the old days it was customary to have only one back; but this arrangement was found faulty, as one back could not cope with judicious passing or combined rushes. The only advantage gained by having only a single back is that the opposite forwards are liable to be off-side very frequently, unless they meet the circumstances by long passing across the ground, the receiving forward always taking care to be behind the passer at the moment the ball is kicked. These tactics would soon suggest themselves to anyone with a knowledge of Football. So, on the whole, there is not much to be said for the single back.

With regard to the shift of withdrawing a forward and putting an extra back, there is this much to be said: that three backs are extremely hard to get through. As a matter of fact, when a forward is withdrawn, he is generally put half-

back and one of the half-backs put back. But unless the players thus moved are versatile and capable of performing satisfactorily the duties of their altered positions, it is a question whether the change really strengthens the defence. For by withdrawing a forward one of the opposing backs or half-backs is left comparatively free and unmarked, at liberty to do much more attacking work. The normal arrangement of a side seems the most telling and reliable. It is certainly unwise to play a third back, unless the extra man is a capable player in that position.

The best *type of man* for a back is a combination of weight, strength and activity. Very big, heavy men are liable to be rather too slow and clumsy, very small men to be too light and impressionable. A strong man rather above middle height, and fairly heavy, usually turns out the most serviceable. At the same time it must be confessed that a heavy, clumsy, slow man

THE FULL BACK.

does less harm at back than in any other position, and can use what powers he has to better advantage. There have been some very useful heavy backs who have been neither fast nor clever. Weight is certainly very telling at back, especially near goal. A light man is liable to be too easily brushed aside and hustled off the ball; but there have been players of very small stature who have been splendid backs, making up for their lack of weight by extraordinary nimbleness and activity. A light man who is neither fast nor clever had better be put anywhere else rather than back, for he does nothing much by his presence but keep the opposing forwards on-side.

The two essential and fundamental qualities in a back are—(1) sure, determined *tackling*; (2) sure, strong *kicking*.

A back has to *tackle* well in order to deprive the opposing forwards of the ball, and to *kick* well in order to transfer it from his own to the enemy's territory.

It is not easy to explain what tackling is, or to give instructions how to tackle successfully. Perhaps tackling may be roughly described as stopping an opponent who has possession of the ball and dispossessing him of it. Almost every player has his own particular way of tackling. But there are broadly speaking two methods which may be distinguished from one another.

In tackling the man with the ball you may (1) pay most attention to *the man;* charge or hustle him aside, and meanwhile, or just afterwards, secure the ball; practically you force the man off the ball, and then deal with it. Or (2) you may pay most attention to *the ball;* trusting to strength and cleverness of foot and leg to secure the ball without using the weight of your body against your opponent. Either you plant your foot firmly on one side of the ball and trust to being able to keep it so until the possessor staggers or overruns the ball, or you hook the ball away from his foot by a dexterous dive with your own.

The weakness in the first method is that you are liable to muddle the ball and fail to have it under your control even after dispossessing your adversary, and it may easily be secured by another man who is following up close behind, or beside the man with the ball. On the other hand, unless you bungle or are evaded, you at any rate stop the man for the time being, even if the ball is secured by one of his comrades; and you are probably in a position to prevent a pass back to him. In other words you put one man out of action temporarily.

The objection to the second method is that it is very difficult to get the foot so well planted beside the ball that your leg is not pushed away by your opponent's weight or impetus. On the other hand, if you do secure the ball thus, it is absolutely under your control.

Generally speaking, when your opponent is trying to rush through, or is dribbling fast, the first method is the better of the two. If he is going fast, he has less power to dodge, so you can generally block him with your body. Also, he is liable by his impetus to drive through a mere impeding leg.

But the second method is the better for stopping a deliberate, tricky piece of dribbling, because your opponent, not having much pace on, is not so likely to push your foot aside; and because, in meeting him thus, you need not make a dash or rush at him, which he can readily avoid, as at the pace he is going he can easily dodge to either side.

These are alternative methods of tackling, and most players are in the habit of using either one or the other exclusively. But there is a third method, which for general purposes is the best. It consists of a *combination* of the two above mentioned. Without distinctly charging your opponent you may contrive to put enough of your weight against him to stop or seriously impede him, preserving at the same time sufficient

control over your own balance and movements to be able to use your legs and feet for extricating the ball from his possession. The difficulty is to apply sufficient weight to stop the man without losing the balance, which it is necessary to preserve in order to use the legs with firmness and accuracy. But the method is worth acquiring, because it is free from the drawbacks of pure charging and pure leg tackling. It does not entail a heavy rush which, if avoided by your opponent, carries you out of action for some, perhaps fatal, seconds: neither is it liable to be weak and ineffectual through your opponent's impetus. It is not only a pliable and versatile, but a strong and sufficiently forcible method.

The secrets of good tackling, by whatever method, are—(1) to *time* your tackle well; that is, to make your attempt to get the ball exactly at the right moment; (2) when you do make your effort, to make it with all *determination*, as if the whole match depended on your getting the ball. The great point, of course, is never to miss your tackle. Apart from this, the criterion of good tackling is whether, after failing in your attempt, you are able to renew it without any appreciable delay.

If the art of tackling is hard to explain on paper, that of *kicking* is even more so. It has already been said that strong, sound kicking is essential in a back. Certainly a weak, erratic, unsafe kick cannot be entrusted with the responsibility of defence.

There is little doubt that an Association ball should be kicked *not* with the point of

SAVED FROM TOUCH

the toe, but with the *instep*. When the ball is stationary, the instep cannot be applied to the ball, but the part of the foot between the instep and the toes can. In order to get force into a kick the leg should swing clean and free, and should follow through after the ball. The body should be so poised that the weight is brought to bear upon the ball much as it is in making a drive at cricket.

It is necessary to learn to kick in whatever position you may be, and however the ball happens to come to you. Sometimes the ball is on the ground, sometimes in the air, sometimes bouncing about. When the ball is kicked before it reaches the ground it is said to be volleyed. The *volley* is rather a difficult kick, and requires considerable practice. Some backs stand still to volley, and kick with a bent leg when the ball is about hip-high. Others run at the ball and kick it when it is about a foot off the ground, with a straight leg. The former method favours accuracy, the latter power. One of the secrets of safe back play is to make every kick as easy as possible, by always getting into the most suitable position in good time. In order to do this the attention must be kept closely upon the ball. Often a back has to kick in a hurry and as best he can, but the thing to aim at is to make each kick as easy as possible.

The ball is said to be *half-volleyed* when kicked the moment it touches the ground, or a fraction of a second afterwards. It is a brilliant, powerful kick when well-timed, but it is somewhat unsafe to attempt because, if mistimed, a "foozled" weak kick results. If you can, by all means use the half-volley; but remember that the volley is easier and surer than the half-volley, and the ordinary ground kick than either.

Often the best and safest way of dealing with the ball is to *head* it away. Instead of volleying the ball, the player receives it on the top of his head just above the forehead, where the skull is very thick, and makes it bounce forward. Impetus is given to the ball, partly by its own elasticity, and partly by force imparted by a movement of the neck, and sometimes by a semi-jump up towards the ball as it descends. Some players can head the ball an enormous distance. The art of heading is well worth cultivating. The difficulty is to meet the ball with the right part of the head.

For practice in kicking and heading, nothing is better than what is usually called a "punt-about." That is, three or four or more players go to a ground and kick the ball about to one another, taking it as it comes.

Combination—First of all, it is necessary to recognise that there is an attacking as well as a defensive side to back play. That is to say, a back should, as far as he can, help his side to get goals. His first duty is of course to defend his own goal, and that he must never forget. But it is a mistake for him to regard this as all that is expected of him. The way in which he can aid his side in attacking is by passing to, or, as it is called, feeding his forwards. Obviously huge lofty kicks are no good for this purpose. It is very common to see backs kicking as high and hard as ever they can on every possible occasion, but this is bad

play. Low kicks of moderate length are the best. When there is room and time, a kick right along the ground is the best of all. Indeed, a back should regard accurate passing as no less necessary on his part than on that of a forward. A back should never kick without thinking where the ball is going. By continually trying to put the ball where desired, the power of placing may be gradually obtained.

It is most important to recognise the value of feeding the forwards. But it is even more important not to make the mistake of sacrificing soundness of defence in any way whatever. When a back is in difficulties, or is hard pressed near his own goal, he must kick as strongly and as quickly as he can. He must clear at all costs. Defence is the first point; then comes attack—in back-play.

Avoid, on the one hand, weak kicking and hesitation near your own goal, and, on the other, wild thoughtless kicking when you have the ball free somewhere down the field. Kick out to the wings when near your own goal; try to feed the centre and inside forwards when in your opponent's territory. Defend at all costs, but whenever possible feed your forwards. A back should never dribble—it serves no good purpose, and is sure to get him away from his proper place.

Combination in defence consists in playing, not alone, but together with the half-backs, the other back, and the goalkeeper. The backs and half-backs should one and all be in touch with one another. They should help one another in every possible way, and each one should allow himself to be helped. When one man is tackling, another should be ready to intercept the adversary's pass; when one man is kicking, another should try to keep him from being charged. Theoretically, each back and half-back should mark one of the five opposing forwards, but, as the game chops and changes almost every moment, no rigid, cut-and-dried system is much use. Near their own goal the backs should mark the two inside forwards. When half-way down the ground, they usually attend to the two outsides. They should never be so far from the half-backs as to be out of touch with them, nor so near up to them that the opposing side can over-kick with impunity.

In combining with one another, the backs should aim at mutual help. When one is rather forward, the other should be rather behind him. Sometimes it pays for one back to pass to the other, but a back should never pass when there is the least danger of the ball being intercepted.

Near goal, the backs should give the goalkeeper plenty of room, and, as far as possible, follow his directions. They should keep opponents from charging or hampering him. They should play to him; that is, give him every chance of getting the ball whenever he wants it.

The half-backs are the most important part of an Association side. They are the nucleus of the whole combination both for defence and attack. No matter how good the backs and forwards, a side cannot play a strong game if the half-backs are weak. In fact, one bad half-back is enough to handicap the other ten players considerably.

The old idea was that a side was divided into two parts: one, consisting of the goalkeeper, the backs, and the half-backs, for defence; the other, consisting of the forwards, for attack. That the backs, though their work is mainly defensive, share somewhat in the attack has been shown. Now the half-backs' work is neither purely defensive nor purely aggressive, but both in an equal degree. When the opponents are attacking, the half-backs must, equally with the backs, be defending, and, when their own side are attacking, they must help in the attack equally with the forwards. Near their own goal they are to all intents backs, near their adversaries' goal they are practically forwards. So a half-back has no rest. He is on the move and in the thick of the fight all the game through.

A half-back should be able to *tackle* as strongly and surely as a back, and kick nearly as hard and far: and at the same time should be able to *dribble* as skilfully and pass as accurately as a forward. He must have quickness and activity, is all the better with a turn of sheer speed, and certainly should be able to "head" the ball with certainty and effect. In addition, he should be a good shot at goal.

Three half-backs are played nowadays, except when such alteration as that described under "Backs" is made. They are called respectively the right, centre, and left half-back. The right and left half-backs have similar duties. The centre has to work in a way accommodated to his position, as the pivot upon which the whole side works.

The duties of the three half-backs may be summarised thus—(1) to defend like extra backs; (2) to attack like extra forwards; (3) to combine these two duties and accommodate their fulfilment to the varying circumstances of the game.

With regard to the *defensive part* of half-back play, when it is said that half-backs should defend like extra backs, it must not be forgotten that the circumstances wherein a half-back is called upon to act precisely as a back, do not occur frequently, and sometimes never during an entire game. A half-back is generally in an intermediate position, *i.e.*, he is generally half as near again to his forwards as is a back, and also, except in rare cases, he is not the last defensive resource between the opposing forwards and the goalkeeper, since the backs are behind him. Consequently, he is rarely called upon to make a very long kick or to clear as best

he can without reference to where the ball goes; but sometimes the ball is taken into such a position that one of the backs has to leave the mouth of the goal and run out to the sides of the ground, and the nearest half-back has then to take up the vacated place. He is for the time being a back and must act as such and must be able to kick hard and far. Sure tackling is just as important in a half-back as in a back. There is a slight difference between the bulk of half-back and back tackling, due to the fact that the half-back, being nearer to the opposing forwards, can usually get at the man with the ball almost immediately, and before the man has got really

ROBBED OF THE BALL.

started. So the charging method of tackling is less, and leg-tackling more, needed in half-back play.

Directly an opponent gets the ball, a half-back must be upon him at once, so as either to tackle him or cause him to pass. If he tackles him and gets the ball, he should proceed to dispose of it to advantage. If he causes him to pass, the back may be able to intercept the ball. If he fails to tackle the man or cause him to pass, *i.e.*, misses him altogether, he must turn and be after him again with the least possible delay. It will be seen that rushing, headlong tactics are not suited for half-back tackling. It should be of the quick, clever, worrying order.

A half-back should be on the look out for *intercepting* passes, whether from the opposing backs, half-backs, or other forwards to the forwards or forward whom it is his place to watch. In order to do this, he must watch closely what the back, half-back, or other forward is doing, and must take steps to be in such a position that he can readily intercept the ball. But he must not get much out of his place, that is, he must be within easy reach of the forwards he ought to be watching, and in touch with the back behind him. If he gets out of his place, the ball may be kicked over his head by an opponent, and the back left to deal with two men, both unhampered.

The usual plan of defence is this. The centre half-back watches and deals with the opposing centre forward. The right back and the right half-back look after the opposing left wing forwards, the left back and left half-back attend to the opposing right wing forwards.

It is impossible to work out any hard and fast lines upon which half-backs should act. The usual plan is for the right half-back to work together with the right back in dealing with the opposing wing forwards, somewhat as follows. Provisionally the back watches the inside, and the half-back the outside forward, anywhere near the goal they are defending; down the field, the back takes the outside and the half-back the inside man. The reason for this is that near goal the back should be in the centre of the ground in order to block the mouth of goal as much as possible, and because the inside forward then is naturally nearer to him than the outside. Whereas, down the field, the outside forward is usually well in front of the inside and consequently nearer the back.

As a matter of practice, the best rule is for the half-back to go at once for the man who has the ball, and for the back to try to intercept the pass. Otherwise the back or half-back may go for the man with the ball, according to which of them is nearest to him. Convenience and expediency must be consulted and judgment used. But hesitation should at all costs be avoided.

The *left back* and *half-back* deal with the opposing right wing on similar lines.

Meanwhile the *centre half-back* is watching the opposing centre forward. He must do his best to prevent the centre forward from receiving a pass from either wing or from any of his comrades. Supposing the centre forward does get the ball, the centre half-back should go for him at once to tackle him. If he is successful, he disposes of the ball to the best advantage. If he misses his tackle, he must turn and be after the man with the ball at once. If, however, the ball is passed to the right or left wing by the centre forward, either the back or half-back should have intercepted the pass or be dealing with the man who received it. The centre half must in any case stick to the opposing centre forward, and hamper him as much as possible. Of course it frequently happens that the centre half-back is compelled by circumstances to tackle one of the inside forwards: in which case one of the wing half-backs has to deal with the unmarked centre forward as well as the other inside wing forward. The main idea is to prevent, as far as possible, combination between the opposing forwards. Each of the defenders looks after one of them, at the same time keeping within his own sphere. One essential point, with regard to the combination

between backs and half-backs, is that the latter should subordinate their play entirely to that of the former. When it is a question as to which of the two should kick the ball and which take the man running for it, the proper thing is for the half-back to keep the opponent off and leave the back to deal with the ball. In other words, the half-backs should aim at providing the backs with freedom of action. The best half-backs are always entirely unselfish.

With regard to half-back play in the *attack*, whenever a half-back has possession of the ball, his duties may be said to be those of an extra forward. The only exception is when he is for the time being compelled to act as a back. Even near his own goal he rarely has occasion to kick blindly: there is generally a forward to whom he may with advantage send the ball.

In order to be successful in attacking, a half-back must be able (1) to *feed* his forwards; (2) to *dribble*; (3) to *shoot*.

Of these three qualifications the first is by far the most important. In fact it is, on the whole, the most important point in half-back play.

When a half-back has possession of the ball, and has not to kick in a hurry, he should take immediate note of the positions of his own forwards and his opponents', and proceed to pass the ball to that forward who is in the best position to receive. Sometimes the half-back is so placed that he cannot get the ball to the forwards without kicking in the air. But, whenever possible, he should pass along the ground precisely as one forward should to another. When he kicks in the air, he had better send the ball out to the wings, and, in any case, try to drop the ball just enough in front of his forwards for them to be able to get it before the opposing backs are upon them. In passing along the ground he should also aim at putting the ball rather in front of the forward, so that the latter can take the ball without having to stop still at all. When a forward has to wait for the ball to come to him there is more time for the opposing defenders to get at him. The usual practice is for the right half-back to feed the right wing, the left half the left wing, and the centre-half the centre-forward or one of the inside-forwards. But it often pays to send the ball right across the ground from left to right or *vice-versâ*. Certainly the centre half may often with great advantage send the ball to one of the outside-forwards. The half-back should particularly avoid so passing that the ball can be intercepted; he had better stick to the ball than send it to one of his opponents. A wild kick is better, on the whole, than a weak pass.

In order to learn how to pass, a half-back cannot do better than play forward occasionally in practice games. This will teach him not only how to pass cleverly, but what kind of passes from half-backs are easy for forwards to take. It is noticeable that forwards who take to half-back instead usually prove very skilful at passing. Converted backs are almost always inclined to kick needlessly hard.

The duty of *throwing-in* when the ball has gone over the touch-line falls to the lot of the

A Throw-in.

two wing half-backs. As the rule is now framed, the player who throws in must do so with both hands on the ball and both feet upon the touch-line. The penalty for infringing the rule is a free kick to the other side.

It is usual for the wing half-back upon whose side it is to take the *corner-kick*. The ball must be placed a yard from the corner-flag. The best kick is one dropping from a fair height into the mouth of goal. It is a mistake to try to place the ball too near goal, as in nine cases out of ten such attempts end in the ball falling behind the goal-line. The outside forward sometimes takes the corner-kick.

It sometimes pays for a half-back to *dribble* the ball a few yards, either to make ground, or to draw one of the opposing half-backs away from watching a forward. But it is a mistake for a half-back to get far out of his place, as the ball may be returned at once to the gap his absence leaves. And it is very undesirable for a half-back to lose the ball to an opponent instead of passing it on to his forwards. A selfish half-back is an abomination, but, as a short dribble occasionally is very useful, all half-backs should learn the art of dribbling.

Half-backs should be good *shots at goal*, for they frequently have chances of scoring. It is often telling for a half-back to put in a high dropping shot or a long hard one into the corner of the goal. The centre half-back should certainly be a good shot, as he often gets a good opening when the ball comes out of a general muddle in the mouth of goal. As a rule, half-backs do not try shots nearly often enough. It is a mis-

take not to shoot when there is a fair chance of scoring.

The Forwards are the five players whose chief concern is to carry the ball down the field and put it through their opponents' goal. As an Association side is arranged nowadays, the five forwards are allotted places thus: the centre-forward is in the middle of the other four; the two on each side of him form the wings: one of the wing forwards plays outside, *i.e.*, near the touch-line: the other inside, *i.e.*, between the outside-forward and the centre-forward. Formerly six forwards were played, but the present system is better, because there is not room enough for more than five to work with full effect.

A forward should be a fast runner, a quick starter, and clever with his feet. Some who on a running track are comparatively slow seem to move quite rapidly on the football field. Sheer sprinting power is extremely useful in a forward, but quickness in starting and ability to dodge are even more valuable. Very few can sprint at full speed and control the ball at the same time, but the control is essential.

There have been first-rate forwards of almost every build. Before fair charging was, by a consensus of opinion among referees, turned into a punishable offence, weight sometimes stood a forward in good stead. As it is, a big forward is better than a small one, other things being equal: for the former can push his way through a scrummage with greater ease, and is less liable to be hustled off the ball. In a really hard-fought game, size and weight tell considerably; but small men seem to be the most effective when the ground is heavy with mud. Generally speaking, heavy men are most suited to be inside- and centre-forwards; light ones to be outsides.

The work a forward has to do requires him to be able (1) to *pass*; (2) to *dribble*; (3) to *shoot*.

The art of **passing** has been brought to mechanical perfection by the various professional teams. The theory of passing is that the forward who has the ball should, when in danger of being tackled, send it on to another who is for the time being unhampered. So it will be seen that a good pass depends upon the co-operation of two players. The one must get into a convenient position to receive the ball; the other must send it on to him accurately and conveniently. The former part of the co-operative process is often neglected, especially by beginners. That the effectiveness of a pass depends just as much upon the receiver as upon the kicker is, however, self-evident. It is useless to pass to a player who is not able to take the ball. One of the first points to grasp is that there is no merit or value in getting rid of the ball aimlessly. If the ball is sent to one of the opposing side, or even kicked so that an opponent has as good a chance of getting it as one of your own side, not much is gained.

Another point worth remembering is that the object of forward play, and of passing as part thereof, is to get the ball down the ground towards the adversaries' goal. Nothing but goals score in Association, so obtaining goals should be made the ultimate and only aim in forward play. It is quite useless for a set of forwards to play a clever passing game in the middle of the field if no progress is made towards goal. The best kind of pass is one which makes most ground towards goal; hence it pays to pass "through" and as much in front of you as possible. To pass sideways clearly gains less ground. The direction of a pass must depend upon where the prospective receiver is, and he ought to be as far forward as he can without getting out of touch with the passer, or infringing the off-side rule.

Again, it is not advisable to pass straight to where the receiving forward is, but a yard or two in front of him, in order that he may be able to take the ball on without stopping in his stride. Pass to where the man will be, and not to where he is. If the receiver has to stop he loses time and pace, and is likely to be tackled by an opponent before he can get started again. A pass which causes the receiver to face his own goal, or even go back a few feet to get the ball, is a bad one.

Sometimes it is necessary to pass back to a forward behind you; but this should never be done unless there is no way of getting rid of the ball to advantage in a forward direction. A few yards, it is true, do not make the difference in Association that they do in Rugby; still it is always advisable to make ground rather than lose it.

The forward with the ball should endeavour to draw one of his opponents on to him before passing, just as a three-quarter does in the Rugby game. When there is no danger of being tackled, the ball should be kept and not passed, unless there is some obvious advantage to be gained. The whole merit of a pass consists in its being well-timed and advancing matters; needless "piffling" passing is unprofitable. When drawing an opponent, care must be taken to get rid of the ball just in time; there need be no danger of losing the ball if the manœuvre is skilfully executed.

Most good forwards, in passing, kick the ball with the inside of the right foot when sending it to the left or in front, and with the outside of it when sending it to the right, and *vice versa* with the left foot.

Sometimes a short pass of a few yards, sometimes a long one right across the field, is suitable. The former game is liable to degenerate into mechanical "piffling" if carried too far, the latter into mere kick-and-rush. A

side's passing should be versatile: both short and long passes should be used. Experience has proved that the short passing game can be broken up by a determined defence. For weak short passing nothing can be said. In exciting matches played at high pressure, long passing with plenty of individual dash seems to pay best. In ordinary club matches the "short" game is often successful, but, being mechanical, is not so well suited for cup-ties and such like.

For the very reason that passing can be carried to excess, the old art of **dribbling** must not be neglected by forwards, for, though combination is the foundation of a good forward

A Forward Dribbling.

game, an occasional individual effort is often very telling. In any case, when a man has the ball to himself and plenty of room in front of him, he should, in order to make ground as quickly as possible, be able to dribble. There is not much that can be said about dribbling. The great point is to go as fast as possible without losing control over the ball. A forward may be a good dribbler, and dribble often, and yet not be in any sense of the word a selfish player. The point is that a forward should pass the ball when a pass is required, and run with it himself when there is a proper opening for individual effort.

To be a good **shot at goal** is a great recommendation in a forward, and every forward should try to master the art of shooting. Many goals are got by combination and a shot that is merely a touch with the foot. But against a strong defence often the only chance of scoring is by smart, clever shooting. It is comparatively easy to shoot accurately in practice, but in a game, when you are being charged by a back or are in a difficult position, it is quite the reverse. Time after time one sees a side which can get the ball down to the goal, but cannot shoot. Such a side is often beaten by one which it outplays everywhere except in front of goal. Dash and determination at the last moment are requisite for goal-getting. It is no use passing and repassing in front of goal; such proceedings waste time, and allow the defenders to concentrate and pack the goal. Forwards should not shoot wildly and recklessly, but neither should they dally nor throw away fair opportunities. It is sound policy to shoot whenever there is a good chance of scoring, and certainly in this case *bis dat qui cito dat*. Low hard shots are the most effective; but the point is to get the ball through, no matter by what means. The more attention forwards give to practising shooting the better; good shooting wins, bad shooting loses matches. Of course it is more important for the centre and two insides than for the outsides to be able to shoot.

Forwards are all the better for being able to head the ball well; heading is especially useful for scoring goals from corner kicks. Some of the professionals can pass the ball almost as accurately with their heads as with their feet.

The **centre-forward** is the pivot on which the forward line works; his chief duty is to keep the other forwards together and feed them well. Sometimes he should pass right out to the outsides, sometimes keep the ball between himself and the insides. He should be able to pass accurately with either foot. In his own half he should aim at getting the ball to the outsides; nearer the opponents' goal he should keep it in the middle. He should be a good shot.

The two **inside-forwards** are the connecting links between the centre and the outsides. They should feed their outsides well and give them as many chances as possible of getting well away. After passing out they should get forward as fast as possible in order to be in a good position for receiving the ball back again.

The two **outside-forwards** should be fast runners, as they have frequent opportunities of getting away with the ball. But they should be ready, when necessary, to pass back to their inside men; they should send the ball across into the centre in good time. It is a mistake for an outside to run the ball too far down the ground before middling it. Long passes from wing to wing are very telling. Outside men should not attempt to shoot too often; it pays better to send the ball into the middle, for the centre- or inside-forwards to deal with it in front of goal. Usually the outsides should be rather in front of the other forwards, but they should avoid loafing and off-side tactics.

C. B. Fry.

AMERICAN FOOTBALL—The first mention of football in America refers to a time when, in New England, many years ago, unnumbered sides formed, and struggled for possession of an inflated bladder, much as in the earliest records of the English game; only, so far

as we can learn, the first American football was more of a kicking game, whereas the very first English was more of a carrying or Rugby game. There were no rules, of course, except those of mere local application, and all disputes were settled on the field. Crude as it was, this game was taken up by schoolboys, and naturally found its way into the colleges. Yale University has the first authentic record of football in an annual Freshman-Sophomore match, which became an institution in 1840. The challenges and acceptances of these matches were publicly posted on the doors of Old Chapel. The game was by no means scientific, in fact it was a mere rough and tumble, and the ball was a round bladder in a leather case. These annual football scrambles were continued until 1858–59, when they were stopped by the order of the Faculty, and replaced by the annual rushes between the classes, which, after all, differed but little from the game as it had been played, except in the absence of a ball. These rushes were not governed by rules, but they were the means of suggesting later organisation. From 1859 until 1870 football was neglected in the United States; but with 1870 began an awakening which finally resulted, in 1873, in a convention, held in New York by Columbia, Princeton, Rutgers and Yale Universities, at which a set of rules was adopted, and the foundation laid for the intercollegiate matches. In 1872 Columbia played a match with Yale; there were twenty men on a side and the game was a species of Association. The men wore long trousers and jerseys. The few rules they had were very simple, and forbade anyone picking up, carrying or throwing the ball. There were no on-side and off-side rules, and goals were made by sending the ball under rather than over the cross bar. Fouls were penalised by compelling the erring player to throw the ball straight up in the air from the place where the foul was committed, and it was regarded unfair to touch the ball on its descent until it struck the ground. This rule developed some clever drop-kicking; the men practising kicking the ball just as it touched the ground. When a man was disabled and retired from the game, his place was not taken by a substitute, but conditions were evened by the other side dropping off a man.

In the year of the Convention, 1873, Yale played a game with eleven Englishmen, captained by an Eton boy named Allen, and beat them two goals to one. At about this time, 1874, Harvard had been playing matches with Canadian teams under the Rugby Union rules; Harvard and Yale had not met. In 1875 Harvard and Yale had a conference which resulted in an agreement for games to be played under compromise rules of the then existing American college game and the Rugby Union. The first Harvard-Yale game, in 1876, recorded the defeat of Yale by 4 goals and 2 touchdowns to nothing, and the result of the contest was a complete dissatisfaction with the compromise rules. This led to the adoption of the regular Rugby Union rules, and thence, from the Rugby Union of 1875, comes the American game.

With the adoption of the Rugby Union rules, there came an end to "shouldering"—a method pursued to put a man "off the ball,"—and hitting or batting the ball with the fist. In this latter practice, some men had grown so skilled that they could bat the ball almost as far as it is now kicked. The ball used at that time was the round black rubber one, and the system of play included a great deal of "babying" of the ball with the hand; this "babying" corresponded to the dribbling of the Association game, which early American players seemed unable to acquire to a very skilful degree.

When the Rugby Union rules were first adopted, American teams were made up of eleven men; subsequently they were increased to fifteen, continued at that number for several years, and finally changed back to eleven, at which number they have remained. When the sport was first introduced into America, the players were called "forwards," "half-backs" and "goal tends," and it was some time before the men received the specific titles by which they are at present known. One of the first to be particularly designated was the man who put down the ball in a scrimmage, namely, the "centre rush," or "snap-back." After the first game between Harvard and Yale in 1876, immediate effort was made to revise the rules to meet American ideas of the needs of American players. One of the features of the American game—perhaps the most distinctive one—is, and has always been since we first began rule revising, the outlet of the scrimmage. In the Rugby Union game, as it came to us, the man who chanced to have the ball when the down was made was the one to place it on the ground in the new line-up. Very little experience convinced Americans that some men were better calculated to put the ball in play than others, and so before long this play was given to one man, forthwith called the "snap-back." In English Rugby the ball may be rolled out by any man, and at no stated opening; in American Rugby one man has entire control of its coming and does not put it in play until signalled to do so by the quarter-back. In the English game the ball comes out in haphazard fashion, reaches the runner's hands, and off he goes with no especially preconceived plan of play. In the American game one man, the "snap-back," puts the ball in play: one man, the "quarter-back," gives the signal for putting it in play; the same man invariably receives it and gives it to the runner, and when the ball reaches the runner, the latter is only a part of a pre-arranged play in which the entire team performs a rehearsed and elaborate part. In an American game the ball

never goes into play except by signal, and each play is the result of much theoretical study and long and careful practice. The American game is entirely strategic, and each season reveals new plays, the successful execution of which has taken weeks of preliminary work on the chess board as well as on the playing field. Originally the American game employed the English "scrum," but we shortly found it advantageous to let the other side do the kicking out of the ball; our side leaving an opening at the proper moment through which the ball could escape. This suggested one man behind the line (afterwards the quarter-back), whose business it would always be to receive the ball from the "scrum" and pass it to the backs. When the advantage derived from letting the other side in the "scrum" do the kicking became apparent, the rushers began rolling the ball sideways along between the two lines. Then we discovered that a man could snap the ball back with his toe, and hence started the first two divergencies from English play,—namely, the same man always to snap the ball out of the scrum and the same man always to receive it.

The next development was in specialising the work of the rushers. The centre rush or snap back was at first a light man, chosen for his activity, but it became apparent that heavy men were needed where the fight raged around the ball; hence, he became heavier. The next men who received attention were the end rushers. As the American game developed, it was discovered that the men on the end of the line had opportunities to make runs and free catches off short kicks; and so these positions became among the most important on the line. The next of the men named were the guards, who stood to the left and the right of the centre and protected the quarter-back when he passed the ball. The next two men on the line were called tackles, because more than to any other of the rushers it fell to them to get into and break up plays of the opponents.

With the designation of the players, which gave them specific duties, and the return to teams of eleven men, the American game may be said to have become fully established. In 1882, a system of play by which an inferior team was able to escape defeat through getting and keeping possession of the ball (making only a pretence of play), had become known as the "block system," and was so menacing to the interest of the game that the "five yard rule" was introduced. This is the rule that declares a side must advance the ball five, or retreat with it ten yards in three downs; a down being the end of each play, *i.e.*, when a runner is tackled and held. Ten yards has been increased of late years to twenty—otherwise the rule remains.

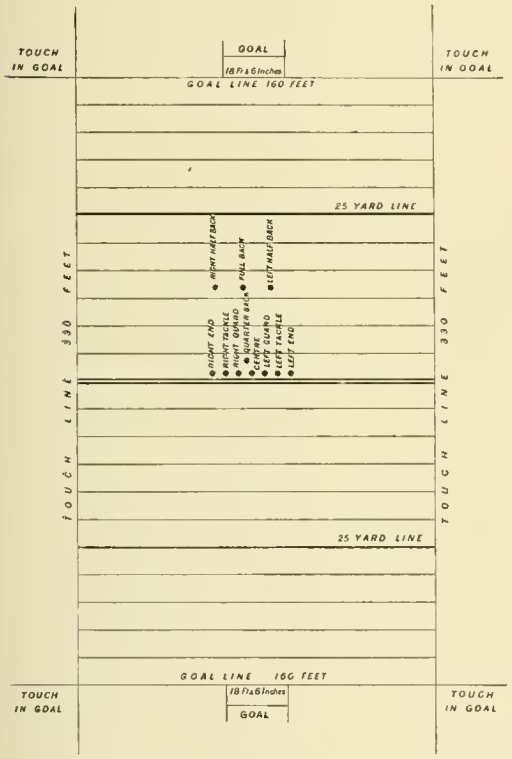
At first the attack was weak, and the question of how to protect the goal resulted in sending too many men up into the line. Gradually, however, experience taught us that the best defence was not to wait until a man got a good start for a goal, but to keep him, if possible, from getting free of the forward line,—in other words, to tackle the runner behind his line and not wait for him to get through it before tackling him. The tendency has been, therefore, in very recent years to lessen the number of men behind the line, and increase the number in the line, in order to crush the play of opponents before it is fairly started. This in its turn created the American interference. The more effort made to crush a play in its incipiency, the greater the effort to protect the runner: hence interference, which, in its American elaboration, is offside to English eyes. Interference, in a word, is protection of a runner, best assured by men going before him to tackle and get the opposing players out of the way. Interference did not spring full-fledged into the American game; it came by degrees. Once established, however, the query was immediately raised of how much aid the interferers could give the runner. At first the use of hands was permitted, but it was finally determined that the runner could be aided to any extent provided hands and arms were not used. The ultra-development of interference created in turn momentum and mass plays, which consisted of grouping a body of men some distance back of the line, and starting the mass before the ball was put in play, so that by the time it reached the line and the ball had been passed, the group had of course acquired great impetus, for the opponents were unable to go forward to meet it for fear of getting off-side. The momentum thus gained was almost impossible to check. This of course resulted in similar momentum tactics on the part of the defence, which for a couple of years—1893 and 1894—made brute strength a very objectionable feature of American football.

In 1895 began legislation against momentum, mass and push plays, and the undue development of interference. This has resulted in several football congresses of American experts under the auspices of the University Athletic Club of New York, with the result that some stringent and wholesome legislation has been passed against momentum and mass plays. The same Rules Committee of this Club made provision for the greater protection of a man on a fair catch, and for the encouragement of kicking and a more open game generally.

The history of American University football is the history of American football. It has always been said that baseball is the national game of the United States, and undoubtedly such is the case; but football has grown so enormously in popularity in the last ten years that it would be an interesting computation to cast up the number of men playing the newer game in America. It is safe to say, that practically every school large enough to support any form of

athletics, every college, every university in this country has one or more football elevens, besides which a large majority of the athletic clubs and many other clubs devoted to sport of one kind or another have an annual football schedule. These all play the Americanised Rugby Union. During the last three years there have been spasmodic attempts to introduce Association football into parts of New England, especially in Massachusetts, where the mills furnish many young men who are eager for some kind of out-door sport which does not demand the training of the Rugby game. One organization was perfected; but, although one occasionally sees incidental mention of it, Association has no place in American football, and the number of men who play it is comparatively insignificant.

Diagram of the American Rugby football field with arrangement of players. This shows the ordinary formation on the offensive. On the defensive the formation is more open, and the full-back near his goal:



Time of Play.—Two halves of thirty-five minutes each, with ten minutes intermission.

A down.—The term used to indicate the number of attempts made to advance the ball. Each side has three tries in which to advance the ball five yards. The end of each try, *i.e.*, when the ball is held by the opposing side, is a down. As soon as the five yards have been gained it is first down again.

Officials.—One referee, who judges the position and the progress of the ball. One umpire, who judges the conduct of the players. Two linesmen, who mark the distance gained and lost, and are aids to the umpire.

CASPAR WHITNEY.

(AN ENGLISH VIEW OF THE AMERICAN GAME.)

When the history of the English game emerges from its somewhat nebulous and plebeian origins in the fourteenth century, which have great affinities to the primitive lacrosse, it may be traced at Rugby in the form which provided a nucleus for the play of the early Blackheath teams. But it was as late as 1849 before our Universities took it up, and it was not until 1873 that the first Oxford and Cambridge match was played. The dates are very similar in its history across the Atlantic. Football is known to have existed at Yale in 1840, but it was not till 1874 that that University beat Princeton, Columbia, and Rutgers; and not until 1876 that matches between Harvard, Yale, and Princeton are recorded, just five years after the formation of our own Rugby Union, and contemporaneously with the first International match in which, at the suggestion of Scotland, our sides were reduced to fifteen men. To increase the pace of the game, the Americans reduced the number on each side still further, to eleven; but there imitation of the Association rules came to an end.

The difficult question of what really constituted being "off-side" had soon been fairly settled by the early fifteens at our Universities, to whom omissions in the letter of their law mattered little in comparison with its accepted spirit. But as soon as the game was tried in the United States, it appeared that being "off-side," that is, playing ahead of the ball, was inevitable with all American teams. The illegality was not merely so often practised, but was also so difficult to detect that the authorities were obliged to legalise it. To the resulting invention of the "snap-back," with all that follows from it, are due most of the distinguishing characteristics of American football. This player stands in front of the "scrummage," holding the ball on the ground between his feet, and before "snapping" it back to his men he shouts a series of numbers (such as "39, 41, 26, 7"), which give the key to the evolutions that his own side are to make, as much to deceive the enemy as to benefit themselves. This system of "signals" is very carefully practised in the greatest secrecy, generally behind a high palisade, so that no hostile eye may watch the evolutions to be used in the coming battle.

The sense in which the word "scrummage" has just been used will be misleading to an English player, for by the reduction of the team, from fifteen to eleven, the original shoving mass of forwards has almost disappeared in American

play. Attention has been concentrated on what is known as the "rush line." The arrangement of the men is almost entirely different; the snap-back (who is also called the "centre-rusher") has only the quarter-back, and the full-back directly behind him. The two half-backs are a little behind the quarter on each side. To the immediate right of the snap-back is the "right-guard," further on in the same line is the "right-tackle," outside is the "right end-rusher." The "left-guard," "left-tackle," and "left-end" complete the line upon the other side. The team which has the ball arranges, by means of the "signals" before described, for the massing of this line on one point of the enemy's defence, and the tactics which are employed to get through need careful description.

The influence of the snap-back will at once be realised from the consideration that the moment he puts the ball into play through his legs behind him, he also makes six men besides himself immediately off-side. The chief business of these men then becomes a general attack on some part of the enemy's line with the object, first, of clearing a path for the man who has to run with the ball, and, secondly, of keeping the opposing players from getting at the runner. This important part of the play is known as "interference"; and a comparison of Rules Nos. 21, 22, 23 in the English code with Nos. 24, 25 in the American, is advised to all who desire further information on a complicated point.

After the "snap-back" had been evolved, further alterations in the old rules followed thick and fast. Americans have very thoroughly convinced their law-makers of the inadequacy of legal language as a vehicle for legislation, and the struggle between the inventive player and the technical phrase-monger is still in active progress. Its details can be briefly sketched. To stop men holding their opponents firmly while their own side did what they pleased with the ball, the use of the arms and hands for this purpose was abolished. It was, however, an easy step to form an impassable barrier of bodies (for the rule had no mention of "bodies") round the ball, and thus prevent the other side from getting at it. Progress might be impossible, but so was defeat as well. A rule was at once made that the ball must advance at least five yards in three "downs," or be taken back ten yards and given to the other side. It was quite easy to avoid that; for if progress was essential, it should be made at any cost; and "flying wedges" were invented. Players were formed up some distance behind the line of play. At a given signal they dashed forward, and the momentum of their impact carried the man with the ball forward for the necessary distance. The other side never had a chance. This would plainly not do; so the rule was made that only three men might get in motion before the ball came into play; but it was rapidly discovered that a more accurate manipulation of the "scrummage" was all that was needed to produce almost the same effects. These tendencies need no further illustration. It will be seen at once that such a thing as a combined rush of the forwards down the field, dribbling the ball at their feet, is unknown; that the long, low passes which Vassall introduced with us are unappreciated; that for the pleasant uncertainty and all the sudden opportunities of independent brilliant play outside the scrummage, has been substituted a cut-and-dried system of "signals," "interference," and "mass-plays," which have utterly changed the aspect of the game.

THEODORE ANDREA COOK.

INTERNATIONAL FOOTBALL—In the winter of 1870 the first "International match" was played at the Oval. England and Scotland were the nations represented, and the Association code of rules was used. This naturally caused considerable indignation north of the Tweed, where nearly all the clubs played the Rugby game. A challenge between the Rugby players of the two countries was issued, and March 1871 saw the first International under the carrying rules.

I. The Rugby Game—As has been mentioned, 1871 saw the first match between teams representing England and Scotland. In 1875 the formation of an Irish Rugby Union was followed by an International match in London. It was not, however, till 1880 that England and Wales first met. Of the other International matches those between Scotland and Ireland commenced in 1877; those between Scotland and Wales in 1883; those between Ireland and Wales in 1882. The matches have not, however, been played every year. In 1884, for instance, an unfortunate dispute on the point of play resulted in the postponement of the England *v.* Scotland game of 1885. In 1888 and 1889 England played no International matches at all. The reason was as follows. In 1886 England made an alteration in the scoring laws, and the other Unions protested. Matters came to a crisis in 1887, when the nationalities, England excepted, proposed an International Board, invested with power to issue laws relating to the International contests. At the same time they demanded that each nationality should be equally represented on the proposed board. As England had an enormous majority of clubs, this was manifestly unfair. At last, in December 1889, Lord Kingsburgh and Major Marindin arbitrated on the whole question. From their award has sprung the present International Football Board. It consists of twelve members, six from England and two from each of the other nationalities. All International matches are played under rules that are subjected to its approval, although it has no jurisdiction over the game as played within the limits of the

various Unions. A three-fourths majority is, however, necessary for any alteration in the laws of the game, while, in case of International disputes, a committee consisting of two representatives appointed by each Union shall arbitrate. Despite of these elaborate precautions a serious dispute between Wales and the International Board broke out in 1896. A proposed presentation to the celebrated Welsh three-quarter, A. J. Gould, was forbidden by the Board as savouring of professionalism. The quarrel is still proceeding, and owing to its evil influence, the Scotch and Irish matches with Wales fixed for January and March 1897 have not been played.

The method of selecting the members of the **International teams** differs in the various Unions. In England a system of trial matches allows the Selection Committee an opportunity of gauging the respective merits of the players. Up to the year 1890, the first trial match in the South was that between London and the Western Counties. This was followed by London and the West *v.* Oxford and Cambridge, a fixture which is still regularly played. From this game, and from the Oxford *v.* Cambridge match, the members who represent the South in the North *v.* South match are selected. The Northern players are chosen according to their display in the County matches, such as Yorkshire *v.* Lancashire and the like. After the North *v.* South match, two such games being now played a year, the English team is chosen.

In Scotland, as in England, a Committee of the Scotch Union is responsible for the selection of the Internationals. Big annual contests like the "Inter-City" enable members of this Committee to gather some idea of the merits of the players. Trial matches also exist, such as Edinburgh and Glasgow *v.* the Rest of Scotland, and Edinburgh or Glasgow *v.* the South of Scotland. In Ireland Inter-county matches practically decide the team. In Wales the fact that there are, comparatively speaking, few Clubs renders the trial game unnecessary, as the merits of the "crack" players are already known.

There is no special definition controlling the choice of a player as to the country for which he shall play. At the same time, the International Board decided at Leeds in 1894 that no player could in future play for more than one country.

The results of the International matches to date are here appended:—

England *v.* Scotland.

England, 9; Scotland, 8; Drawn, 7.

1871—Edinburgh. S, 1 g, 1 t—1 t
1872—Oval. E, 2 g, 2 t—1 g
1873—Glasgow. No score
1874—Oval. E, 1 g, 1 t—nil
1875—Edinburgh. No score
1876—Oval. E, 1 g, 1 t—nil
1877—Edinburgh. S, 1 g—nil
1878—Oval. No score
1879—Edinburgh. 1 g—1 g
1880—Manchester. E, 2g, 3t—1g
1881—Edinburgh. 1g, 1t—1g, 1t
1882—Manchester. S, 2 t—nil
1883—Edinburgh. E, 2 t—1 t
1884—Blackheath. E, 1 g—1 t
1886—Edinburgh. No score
1887—Manchester. 1 t—1 t
1890—Edinburgh. E, 1g, 1t—nil
1891—Richmond. S, 3 g—1 g
1892—Edinburgh, E, 1 g—nil
1893—Leeds. S, 2 g—nil
1894—Edinburgh. S, 2 t—nil
1895—Richmond. S, 1 g, 1 t—1 g
1896—Glasgow. S, 1 g, 2 t—nil
1897—Manchester. E, 2g, 1t—1t

England *v.* Ireland.

England, 16; Ireland, 4; Drawn, 1.

1875—London. E, 2 g, 1 t—nil
1876—Dublin. E, 1 g, 1 t—nil
1877—London. E, 2 g, 1 t—nil
1878—Dublin. E, 2 g, 1 t—nil
1879—London. E, 3 g, 2 t—nil
1880—Dublin. E, 1 g, 1 t—1 t
1881—Manchester. E, 2g, 2t—nil
1882—Dublin. 2 t—2 t
1883—Manchester. E, 1g, 3t—1t
1884—Dublin. E, 1 g—nil
1885—Manchester. E, 2 t—1 t
1886—Dublin. E, 1 t—nil
1887—Dublin. I, 2 g—nil
1890—Blackheath. E, 3 t—nil
1891—Dublin. E, 2 g, 3 t—nil
1892—Manchester. E, 1g, 1t—nil
1893—Dublin. E, 2 t—nil
1894—Blackheath. I, 1 g, 1 t—1 t
1895—Dublin. E, 2 t—1 t
1896—Leeds. I, 2 g—1 g
1897—Dublin. I, 1 g, 3 t—2 g, 1 t

England *v.* Wales.

England, 10; Wales, 3; Drawn, 1.

1880–81—Blackheath. E, 8 g, 5 t—nil
1882–83—Swansea. E, 2 g, 4 t—nil
1883–84—Leeds. E, 1 g, 2 t—1 g
1884–85—Swansea. E, 1 g, 4 t—1 g, 1 t
1885–86—Blackheath. E, 1 g, 2 t—1 g
1886–87—Llanelly. No score
1889–90—Dewsbury. W, 1 t—nil
1890–91—Newport. E, 2 g, 1 t—1 g
1891–92—Blackheath E, 3 g, 1 t—nil
1892–93—Cardiff. W, 2 g, 2 t—1 g, 3 t
1893–94—Birkenhead. E, 5 g—1 t
1894–95—Swansea. E, 1 g, 3 t—2 t
1895–96—Blackheath. E, 2 g, 5 t—nil
1896–97—Newport. W, 1 g, 2 t—nil

Scotland *v.* Ireland.

Scotland, 16; Ireland, 2; Drawn, 2.

1877—Belfast. S, 6 g, 2 t—nil
1879—S, 2 g, 1 t—nil
1880—Glasgow. S, 3 g, 2 t—nil
1881—Belfast. 1, 1 g, 1 t—nil
1882—S, 2 t—nil
1883—S, 1 g, 1 t—nil
1884—S, 2 g, 2 t—1 t
1885—Edinburgh. S, 1 g, 2 t—nil
1886—S, 4 g, 2 t—nil
1887—S, 4 g—1 g
1888—Edinburgh. S, 1 g—nil
1889—S, 1 g—nil
1890—S, 1 d g, 1 t—nil
1891—Belfast. S, 4 g, 2 t—nil
1892—Edinburgh. S, 1 t—nil
1893—Belfast. No score
1894—Dublin. I, 1 g—nil
1895—Edinburgh. S, 2 t—1 t
1896—Dublin. No score
1897—Edinburgh. S, 2 g—1 t

Scotland *v.* Wales.

Scotland, 9; Wales, 4; Drawn, 1.

1883—Edinburgh. S, 3 g—1 g
1884—Newport. S, 1 g, 1 t—nil
1885—Glasgow. No score
1886—Cardiff. S, 2 g, 1 t—nil
1887—Edinburgh. S, 4g, 2t—nil
1888—Newport. W, 1 t—nil
1889—Edinburgh. S, 2 t—nil
1890—Cardiff. S, 1 g, 2 t—1 t
1891—Edinburgh. S, 3 g, 6 t—nil
1892—Swansea. S, 1 g, 1 t—1 t
1893—Edinburgh. W, 1 g, 3 t—nil
1894—Newport. W, 1 g, 1 t—nil
1895—Edinburgh. S, 1 g—1 d g
1896—Cardiff. W, 2 t—nil

Ireland *v.* Wales.

Ireland, 5; Wales, 6; Drawn, 1.

1882—Dublin. W, 2 g, 2 t—nil
1884—Cardiff. W, 1 g, 2 t—nil
1887—W, 1 g—3 t
1888—Dublin. I, 2 g, 1 t—nil
1889—Swansea. I, 2 t—nil
1890—Dublin. 1 g—1 g
1891—Llanelly. W, 2 g—1 g, 1 t
1892—Dublin. I, 1 g, 2 t—nil
1893—Llanelly. W, 1 t—nil
1894—Belfast. I, 1 g—nil
1895—Cardiff. W, 1 g—1 t
1896—Dublin. I, 1 g, 1 t—1 g

II. The Association Game—As in the Rugby game, matters affecting Association football in its International relations are under the control of an International Association Board. It is composed of eight members, two of whom represent the English, Scottish, Welsh and Irish Associations respectively. No alteration in the laws of the game can be made save by a unanimous vote of the members present. In International matches, the qualification is birth, or, in the case of British subjects born abroad, the nationality of their fathers. A Selection Committee of each Association is responsible for the team that is to represent the country in which that organisation is maintained. The

following are the results of the International matches to date:—

ENGLAND *v.* SCOTLAND.

England, 7; Scotland, 13; Drawn, 6.

1872—Glasgow. 0—0
1873—Oval. E, 4—2
1874—Glasgow. S, 2—1
1875—Oval 2—2
1876—Glasgow. S, 3—0
1877—Oval. S, 3—1
1878—Glasgow. S, 7—2
1879—Oval. E, 5—4
1880—Glasgow. S, 5—4
1881—Oval S, 6—1
1882—Glasgow. S, 5—4
1883—Sheffield. S, 3—2
1884—Glasgow. S, 1—0
1885—Oval. 1—1
1886—Glasgow. 1—1
1887—Blackburn. S, 3—2
1888—Glasgow. E, 5—0
1889—Oval. S, 3—2
1890—Glasgow. 1—1
1891—Blackburn. E, 2—1
1892—Glasgow. E, 4—1
1893—Richmond. E, 5—2
1894—Glasgow. 2 2
1895—Everton. E, 3—0
1896—Glasgow. S, 2—1
1897—Crystal Palace. S, 2—1

ENGLAND *v.* WALES.

England, 15; Wales, 2; Drawn, 2.

1878-79—Oval. E, 2—1
1879-80—Wrexham. E, 3—2
1880-81—Blackburn. W, 1—0
1881-82—Wrexham. W, 5—3
1882-83—Oval. E, 5—0
1883-84—Wrexham. E, 4—0
1884-85—Blackburn. 1—1
1885-86—Wrexham. E, 3—0
1886-87—Oval. E, 4—0
1887-88—Crewe. E, 5—1
1888-89—Stoke. E, 4—1
1889-90—Wrexham. E, 3—1
1890-91—Sunderland. E, 4—1
1891-92—Wrexham. E, 2—0
1892-93—Stoke. E, 6—0
1893-94—Wrexham. E, 5—1
1894-95 Queen's Club. 1—1
1895-96—Cardiff. E, 9—1
1896-97—Sheffield. E, 4—0

ENGLAND *v.* IRELAND.

England, 15; Ireland, 0; Drawn, 1.

1881-82—Belfast. E, 13—0
1882-83—Liverpool. E, 7—0
1883-84—Belfast. E, 8—1
1884-85—Manchester. E, 4—0
1885-86—Belfast. E, 6—0
1886-87—Sheffield. E, 7—0
1887-88—Belfast. E, 5—1
1888-89—Liverpool. E, 6—1
1889-90—Belfast. E, 9—1
1890-91—Wolverhampton. E, 6—1
1891-92—Belfast. E, 2—0
1892-93—Birmingham. E, 6—1
1893-94—Belfast. 2—2
1894-95—Derby. E, 8—0
1895-96—Belfast. E, 2—0
1896-97—Nottingham. E, 6—0

SCOTLAND *v.* WALES.

Scotland, 19; Wales, 0; Drawn, 3.

1875-76—Glasgow. S, 4—0
1876-77—Wrexham. S, 2—0
1877-78—Glasgow. S, 9—0
1878-79—Wrexham. S, 3—0
1879-80—Glasgow. S, 5—1
1880-81—Wrexham. S, 5—1
1881-82—Glasgow. S, 5—0
1882-83—Wrexham. S, 3—0
1883-84—Glasgow. S. 4—1
1884-85—Wrexham. S, 8—1
1885-86—Glasgow. S, 4—1
1886-87—Wrexham. S, 2—1
1887-88—Edinburgh. S, 5—1
1888-89—Wrexham. 0—0
1889-90—Paisley. S, 5—1
1890-91—Wrexham. S, 4—3
1891-92—Edinburgh. S. 6—1
1893—Wrexham. S, 8—0
1894—Kilmarnock. S, 5—2
1895—Wrexham. 2—2
1896—Dundee. S, 4—0
1897—Wrexham. 2—2

SCOTLAND *v.* IRELAND.

Scotland, 13; Ireland, 0; Drawn, 1.

1883-84—Belfast. S, 5—0
1884-85—Glasgow. S, 8—2
1885-86—Belfast. S, 7—2
1886-87—Glasgow. S, 4—1
1887-88—Belfast. S, 10—2
1888-89—Glasgow. S, 7—0
1889-90—Belfast. S, 4—1
1890-91—Glasgow. S, 2—1
1891-92—Belfast. 3—2
1893—Glasgow. S, 6—1
1894—Belfast. S, 2—1
1895—Glasgow. S, 3—1
1896—Belfast. 3—3
1897—Glasgow. S, 5—1

IRELAND *v.* WALES.

Ireland, 4; Wales, 9; Drawn, 3.

1881-82—W, 7—1
1882-83—1—1
1883-84—W, 6—0
1884-85—W, 8—2
1885-86—W, 5—0
1886-87—I, 4—1
1887-88—W, 11—0
1888-89—W, 3—1
1889-90—W, 5—2
1890-91—I, 7—2
1891-92—1—1
1892-93—Belfast. I, 4—3
1894—Swansea. W, 4—2
1895—Belfast. 2—2
1896—Wrexham. W, 6—1
1897—Belfast. I, 4—3

B. F. ROBINSON.

[N.B.—For the Eton and Winchester forms of Football, see under PUBLIC SCHOOL GAMES.]

GLOSSARY.

All on side—(R.) If the ball, when kicked by a player, touches a member of the opposite side, the men upon his own, even though lying far in front of him, are put "all on side." The term is also heard when a man, after kicking, runs in front of men who previously lay before him, and thereby puts them "all on side." [*See also* OFF-SIDE.]

Association Football—That variety of football in which the arms are supposed to be non-existent, and any use of them whatever, except by the goal-keeper, involves the penalty of a free kick. The Football Association, which is formed by a federation of clubs observing this code, and controls their action, was founded in 1863, chiefly under the influence of Cambridge and old Public School men.

Back—(R.) The player who forms the last line of a team's defence, *i.e.*, plays alone and nearest to the goal line.

(A.) One of the two players who stand in front of the goal-keeper, and whose duties are mainly defensive.

Back up—To follow closely a man of one's own side who is in possession of the ball, in order to be in convenient position to take a pass from him, if he be too hard pressed, or to continue the dribbling if he should overrun the ball.

Ball—[*See* RULES 1 (R.) and 1 (A.).]

Behind—(A.) A ball is said to be behind when driven over the goal line by one of the attacking side. If by one of the defending side, a *corner-kick* (*q.v.*) is awarded.

Bully—(R.) Sometimes used for *scrummage* (*q.v.*).

(A.) Any confused play in which several men are very close together, and keep kicking the ball into one another. Especially used of such play when it occurs in front of goal, or when the referee throws up the ball on restarting a game after an accident.

Bye—(A.) A shot that crosses the goal line and goes behind, but fails to go between the goal posts.

Centre—(A.) The forward who plays with the two wing players on either side of him, combining and feeding them.

Charge—(A.) To throw one's weight against an opponent, using for the purpose any part of the body from shoulder to hip.

Clear—To kick or throw the ball well away when dangerously near to the goal.

Collar—(R.) To seize and retain hold of a player who is running with the ball. Also called TACKLE.

Come round—(R.) The exhortation addressed to the forwards when they have overrun the ball, or when the opposing forwards have come through them with the ball. They then have to turn and place themselves, if possible, once more between the opposing forwards and their goal line.

Convert—(R.) To turn a *try* (*q.v.*) into a *goal* (*q.v.*) by place kicking the ball over the bar and between the posts.

Corner—(A.) [*See* RULE 7 (A.).]

County Championship—(R.) The clubs competing for this honour are arranged in districts as follows: (*a*) *North-Western*, Lancashire, Cheshire, Cumberland, Westmoreland. (*b*) *North-Eastern*, Yorkshire, Durham, Northumberland. (*c*) *South-Eastern*. Senior group, Middlesex, Surrey, Kent, Midland Counties. Junior group, Hampshire, Sussex, Eastern Counties. (*d*) *South-Western*, Somerset, Devon, Cornwall. The winners in each group play one another, and the county obtaining the greatest number of points (two for a win, one for a draw) is declared the champion.

Dead Ball—The ball is dead whenever it is out of play, and in both games this is only when outside the field of play, or when the game is suspended for a moment to allow the infliction of a penalty kick, or the reward of a free kick for a *mark* (*q.v.*), &c.

Dead Ball Line—(R.) [*See* RULE 2 (R.).]

Dribbling—Propelling a ball by slight touches, so that, while the runner keeps at full speed, it never gets too far away for him to control it.

Drop-Kick—(R.) [*See* RULE 2 (R.).]

Drop Out—(R.) [*See* RULE 2 (R.).]

Dropped Goal—(R.) A goal obtained by a drop-kick, if it be not a free kick inflicted as a penalty for the

breach of some rule. In such a case, even though from a drop-kick, it ranks as a penalty goal.

Fair Catch—(R.) [*See* RULE 2 (R.).]

Feed—To give to one of the same team a succession of convenient passes.

Five Yards—(R.) No man who lay in front of the kicker can interfere with a player waiting to receive the ball, or who has received it, until he has run "five yards" with the ball, or until he himself has been "put on side" by the kicker. Hence frequently heard as a cry of warning to an impetuous forward.

Follow Up—(R.) To run on after a high kick in order to reach the player who expects to receive it, and tackle him before he can return the kick.

Forward—(R.) [*See* THROWN FORWARD.]

Forwards—(R.) The eight or nine players who form the scrummage.

(A.) The five players who form the front line of a team, arranged as follows: left outside, left inside, centre, right inside, right outside.

Foul—(R.) Illegal obstruction of a player when not in possession of the ball.

(A.) Originally any deliberate unfairness in tackling a man, now often used for accidental illegality, *e.g.* a "foul throw," and also of hands ("to foul the ball") even though unintentionally.

Free Kick—(R.) [*See* RULE 10 (R.).]

(A.) [*See* DEFINITION 2 (A.).]

Full Back—[*See* BACK.]

Gate—(1) Money taken from the crowd that comes to see a football match or (2) persons composing the crowd.

Goal—(R.) [*See* RULES 1 (R.) and 1 (A.).]

Goal-keeper—(A.) The player who stands between the posts, who is allowed to use his hands in his own half of the field.

Goal-kick—(R.) The attempt to kick a goal from a try.

(A.) The kick-out when the ball has gone behind. It must be made from a spot within 6 yards of the nearest goal-post.

Goal-line—The line which runs from corner to corner of the ground under the cross-bar.

Goal-net—(A.) A network behind the goal, into which the ball passes if it goes through, and thereby assists the referee in determining disputes as to whether it went over or under the bar.

Ground—[*See* RULES 1 (R.) and 1 (A.).]

Hacking—Deliberately kicking at an opponent.

Half-back—(R.) One of the two players who stand behind the scrummage to intercept the ball if the opposing forwards bring it through, or the half bring it round, and themselves to pass it to the three-quarters.

(A.) One of the three players who keep between the full-backs and the forwards, feeding the latter and helping the former to keep back the opponents.

Handing-off—(R.) Pushing off an opponent who endeavours to impede a player running with the ball.

Handling, or Hands—(A.) Touching the ball with any part of the arm when in play. Only the goal-keeper can do so without a penalty. "*Hands*" is given against the offender.

Heeling-out—(R.) The practice of forwards in a scrummage pushing back the ball to their halves, in order that they may kick it into touch or pass to the three-quarters.

Held—(R.) A player is "held" when an opponent has both hands on the ball, or when he is neither able to go further himself nor to pass the ball to another.

Holding is the obstruction of a player by any part of hand or arm extending from the body. Illegal in Association football.

In-goal—(R.) [*See* RULE 2 (R.).]

Keep a man off—To obstruct an opponent from approaching a colleague who is about to play the ball. Illegal in Rugby Football.

Kick off—The kick taken at the centre of the ground when the game begins or is restarted after half-time, or after a goal has been scored. The side losing the toss commences the match; the side winning the toss kicks-off at half-time, and the side that loses the goal kicks off during the game.

Kick out or Drop out—[*See* RULE 2 (R.).]

Knock on—Legally equivalent to thrown forward, but more usually confined in practice to hitting the ball forward with hand or arms.

League System—The practice of selecting a definite number of clubs, and arranging for them all to play home and home matches with each other.

Leg up—(R.) The appeal against a forward lifting his leg in the scrummage before the ball is put in, so that he may scrape it back into his own half.

Line out—(R.) The arrangement of forwards opposite to one another when the ball is about to be thrown in from touch.

Linesman (A.) **or Touch-judge** (R.)—The official who stops the game when the ball goes out of the field of play, and decides whose is the right to throw it in.

Man down—(R.) The usual form of a request to the referee to stop the game on account of one or more forwards slipping down in the scrummage, and being unable to get up.

Mark—[*See* RULE 2 (R.).]

Marking a Man—Keeping close to an opponent in order to hamper him if he should receive the ball.

No charge—(R.) The decision of the referee not to allow the players of one side to rush at a man taking a free kick after the ball is down or after the man has started to run for the drop, on the ground that they had started the rush too early before.

No side—(R.) The form of the referee's announcement that the time allowed for the game, usually forty minutes each way, has expired.

Northern Union—(R.) An organisation formed almost entirely of clubs in Yorkshire and Lancashire, which left the Rugby Union in 1895, in order to be able to pay what they might think proper as compensation for the broken time of their members without incurring the punishment of suspension.

Off-side—[*See* RULES 7 and 8 (R.) and RULE 6 (A.).]

Pack—(R.) The forwards who compose one half of the scrummage. Frequently used of the scrummage itself, *e.g.*, "tight packs."

Pass—To kick or throw the ball deliberately to a colleague.

Penalty goal—(R.) A goal which is kicked from a free kick awarded by some breach of the rules.

Penalty kick—[*See* RULE 13 (A.).]

Picked up or Picked out—(R.) The appeal to a referee against a forward who has picked up the ball in a scrummage, or a half who has picked it out from the forwards' legs.

Place—(R.) To kick a ball successfully over the bar and between the posts after it has been placed upon the ground.

Place kick—[*See* RULE 2 (R.) and DEFINITION 1 (A.).]

Points—(R.) A try counts three points; a penalty goal three points; a goal from a try (in which case the try does not count) five points; any other goal, *e.g.*, a dropped goal, a goal from a mark, or one simply kicked from the ground, four points.

(A.) Each goal counts one point.

Poster—(R.) A place kick which, in the opinion of the referee, would have hit the posts produced upward and rebounded into the field of play.

Punch—(A.) To hit the ball away without catching it; of a goal-keeper.

Punt—[*See* RULE 2 (R.).]

Put on side—[*See* ALL ON SIDE.]

Referee—The official who is charged with the duty of starting the game, keeping time, and stopping, and penalising all unfair and illegal play. He is also charged with the keeping of the score.

Rugby Union—The Union, formed in 1871, is composed of those clubs which allow the use of the arms to carry the ball and to impede opponents.

Run in—(R.) To carry the ball over an opponent's goal line and set it down upon the ground.

Scrag—(R.) To screw an opponent's neck under the arm in order to induce him to drop the ball.

Screw—(R.) [*See* WHEEL.]

Scrummage—(R.) A scrummage takes place when the ball is put down between players who have closed round it on their respective sides, and who must have both feet on the ground. Also called Scrimmage, Scrum, and Pack, and sometimes Bully.

Shin-guards—Short pads of cane and leather, sometimes worn down the front of the leg as a protection from accidental hacks.

Six yards' lines—(A.) Semicircles drawn on the field of play with goal posts for centre, six yards for radius and the goal line for diameter. From some point within these lines the goal kick should be taken.

Swing—(R.) [*See* WHEEL.]

Tackle—(R.) [*See* COLLAR.]

(A.) To put one's self in front of a player who is dribbling the ball, and either take it away or force him to get rid of it at a disadvantage.

Take the Man—(A.) To support a player of one's own side who is about to kick the ball by charging an opponent who is coming up with a view to kick it.

Taken over—(R.) No player may kick, pass, or knock on the ball across his own goal-line and there make it dead. Should he do so, an appeal is made for "taken over," and a scrummage must be formed five yards out.

Team—(R.) One side in a match, consisting of fifteen men, formerly of twenty.

(A.) One side in a match, consisting of eleven men.

Ten yards' circle—(A.) A circle of ten yards radius drawn around the centre of the field, upon which the ball is placed for the kick off. Within the circle no one is allowed to come of the side opposed to the kicker off.

Three-quarters—(R.) The players, formerly three, but now more often four in number, who stand between the half-backs and the full-back, waiting to take a pass from the former, or to save a rush of the opponents.

Throw-in—[*See* Rule 12 (R.) and Rule 5 (A.).]

Thrown forward, or Forward—(R.) The appeal against a pass which has been propelled by hand or arm in the direction of the opponents' goal-line.

Time—(R.) Usually 35 or 40 minutes each way.

(A.) Usually 45 minutes each way.

Touch—The space at the sides of the field of play, separated from it by the touch lines. In Rugby football the latter are a part of touch; in Association, of the field of play.

Touch-down—(R.) To settle the ball upon the ground between the goal-line and the dead ball-line. If this is done by one of the attacking side, it is usually called a run-in, and results in a *try* (*q. v.*), and the term "touch-down" applied to the settling of the ball by a defender.

Touch in goal—[*See* RULE 2 (R.).]

Touch judge—[*See* LINESMAN.]

Try—(R.) A try is obtained when one of the attacking side grounds the ball over his opponents' goal-line.

Twelve yards' line—(A.) A line parallel to the goal-line, but 12 yards nearer the centre. Any intentionally unfair play between these two lines is punished with special severity. [*See* PENALTY KICK.]

Twenty-five—(R.) The space between the goal-lines and parallel lines drawn 25 yards nearer the centre.

Volley—To kick a ball before it bounces.

Wheel—(R.) When the forwards of one side, having obtained possession of the ball, go away to their left or right front with it, leaving the opponents on one side, they are said to wheel the scrummage. [*Also* SCREW and SWING.]

Wing-forward—(R.) A forward who comes late into the scrummage and devotes his attention rather to smart breaking away therefrom, and the interception of passes, than to hard shoving in the pack.

(A.) One of the pairs of forwards on either side of the Centre.

LAWS OF THE GAME

I. RUGBY.

I. Introduction—1. The Rugby Game of Football should be played by fifteen players on each side. (Anyone coming under the laws of professionalism shall not be allowed to take part in any game under this Union's jurisdiction.) The field of play shall not exceed 110 yards in length, nor 75 in breadth, and shall be as near these dimensions as practicable. The lines defining the boundary of the field of play shall be suitably marked, and shall be called the goal-lines at the ends and the touch lines at the sides. On each goal-line, and equidistant from the touch-lines, shall be two upright posts, called goal posts, exceeding 11 feet in height, and placed 18 ft. 6 in. apart, and joined by a cross-bar 10 ft. from the ground; and the object of the game shall be to kick the ball over this cross-bar and between the posts. The game shall be played with an oval ball of as nearly as possible the following size and weight, namely:—

Length	11	to	11¼ in.
Length circumference	30	,,	31 ,,
Width circumference	25½	..	26 ,,
Weight	13	..	14½ oz.

Hand sewn and not less than eight stitches to the inch.

II. Glossary—Duties of Officials—Scoring—2. The following terms occur in the laws, and have the respective meanings attached to each:—

Dead Ball Line—Not more than twenty-five yards behind and equidistant from each goal-line, and parallel thereto, shall be lines, which shall be called the dead-ball lines, and if the ball or player holding the ball touch or cross these lines the ball shall be dead and out of play.

In-Goal—Those portions of the ground immediately at the ends of the field of play and between the touch-lines, produced to the dead-ball lines, are called in-goal. The goal-lines are in-goal.

Touch—Those portions of the ground immediately at the sides of the field of play and between the goal-lines, if produced, are called touch. The touch-lines are in touch.

Touch-in-Goal—Those portions of the ground immediately at the four corners of the field of play, and between the goal and touch-lines, if respectively produced, are called touch-in-goal.

A Drop-kick is made by letting the ball fall from the hands, and kicking it the very instant it rises.

A Place-kick is made by kicking the ball after it has been placed on the ground.

A Punt is made by letting the ball fall from the hands and kicking it before it touches the ground.

A Tackle is when the holder of the ball is held by one or more players of the opposite side.

A Scrummage, which can only take place in the field of play, is when the ball is put down between players who have closed round on their respective sides, and who must have both feet on the ground.

A Try is gained by the player who first puts his hand on the ball on the ground in his opponents' in-goal.

A Touch-down is when a player touches down as above in his own in-goal.

A Goal is obtained by kicking the ball from the field of play, except from a punt, from a kick-off, or from a drop-out, direct (*i.e.*, without touching the ground or any player of either side) over the opponents' cross-bar, whether it touch such cross-bar or the goal-posts or not.

Knocking on and Throwing-forward are propelling the ball by the hand or arm in the direction of the opponents' in-goal; a throw out of touch cannot be claimed as a throw-forward.

A Fair-catch is a catch made direct from a kick or knock-on or throw-forward by one of the opposite side. The catcher must immediately claim the same by making a mark with his heel at the spot where he made the catch

Kick-off is a place-kick from the centre of the field of play; the opposite side may not stand within ten yards of the ball, nor charge until the ball be kicked, otherwise another kick-off shall be allowed. If the ball pitch in touch the opposite side may have it kicked off again.

Drop-out is a drop-kick from within 25 yards of the kicker's goal line; within which distance the opposite side may not charge, otherwise another drop-out shall be allowed. If the ball pitch in touch the opposite side may have it dropped out again.

At kick-off the ball must reach the limit of 10 yards, and at drop-out must reach the 25 yards line. If otherwise, the opposite side may have the ball re-kicked, or scrummaged, at the centre or in the middle of the 25 yards line, as the case may be.

Off-side—See LAWS 7 and 8.

3. In all matches a referee and two touch judges must be appointed, the former being mutually agreed upon.

Duties of Referee—The referee must carry a whistle, which he must blow in the following cases:—

(*a*) When he allows an appeal.

(*b*) When a player makes and claims a fair catch.

(*c*) On noticing rough or foul play or misconduct, when for the first offence he shall either caution the player or order him off the ground, but for the second offence he must order him off and afterwards report him to the union to which he belongs.

(*d*) When a player is down in a scrummage and he considers it dangerous.

(*e*) When the ball has been improperly put into a scrummage.
(*f*) When he allows a decision given by a touch judge.
(*g*) When wishing to stop the game for any purpose.
(*h*) If the ball or a player running with the ball touch him.
(*i*) At half-time and no-side, he being the sole timekeeper, having sole power to allow extra time for delays, but he shall not whistle for half-time or no-side until the ball be held or out of play.

Powers of Referee—The referee shall be sole judge in all matters of fact, but as to matters of law there shall be the right of appeal to the Rugby Union. All appeals must be made to him immediately, otherwise they cannot be entertained.

Duty of Touch-Judges—The touch-judges shall carry flags, and shall each take one side of the ground, outside the field of play, and their duty shall be to hold up their flag when and where the ball goes into touch.

4. **Choice of Goals**—The captains of the respective sides shall toss for the choice of in-goals or the kick-off. Each side shall play an equal time from each in-goal, and a match shall be won by a majority of points; if no point be scored, or the number be equal, the match shall be drawn.

Scoring—The following shall be the mode of scoring:—

A try	equals	3	points
A penalty goal	,,	3	,,
A goal from a try (in which case the try shall not count)	,,	5	,,
Any other goal	,,	4	,,

5. **Kick-off**—At the time of the kick-off all the kicker's side shall be behind the ball; if in front, the referee, on an appeal from the opposite side, shall order a scrummage where the kick-off took place. The game shall be re-started by a kick-off.

(*a*) After a goal, by the side losing such goal, and
(*b*) After half-time by the opposite side to that which started the game.

III. Mode of Play—Definitions—6. When once the game is started the ball may be kicked or picked up and run with by any player who is on-side, at any time; except that the ball may not be picked up—

(*a*) In a scrummage.
(*b*) When it has been put down after it has been fairly held.
(*c*) When it is on the ground after a player has been tackled.

It may be passed or knocked from one player to another provided it be not passed, knocked, or thrown forward. If a player while holding or running with the ball be tackled and the ball fairly held, he must at once put it down in front of him.

Off-side—7. A player is placed off-side if he enters a scrummage from his opponent's side, or if the ball has been kicked, touched, or is being run with by one of his own side behind him. A player can be off-side in his opponents' in-goal, but not in his own, except where one of his side takes a free kick behind his goal-line, in which case all of his side must be behind the ball when kicked.

8. An off-side player is placed on side:—

(*a*) When an opponent has run five yards with the ball.
(*b*) When the ball has been kicked by, or has touched an opponent.
(*c*) When one of his side has run in front of him with the ball.
(*d*) When one of his side has run in front of him having kicked the ball when behind him.

An off-side player shall not play the ball, nor during the time an opponent has the ball, run, tackle, or obstruct, nor may he approach within five yards of any player waiting for the ball; on any breach of this law, the opposite side, on an appeal by them, shall be awarded, at their option:—

(*e*) A free kick, the place of such breach being taken as the mark.
(*f*) A scrummage at the spot where the ball was last played by the offending side before such breach occurred.

Except in the case of unintentional off-side, when a scrummage shall be formed where such breach occurred.

9. **Fair Catch**—If a player makes a fair catch he shall be awarded a free kick, and he himself must either kick or place the ball.

10. **Free Kicks**—All free kicks may be place-kicks, drop-kicks, or punts, but must be in the direction of the opponents' goal line, and across the kicker's goal line, if kicked from behind the same. They may be taken at any spot behind the mark in a line parallel to the touch-lines. If taken by drop or punt the catcher must take the kick, if taken by a place-kick the catcher must place the ball. In all cases the kicker's side must be behind the ball when it is kicked, except the player who may be placing the ball for a place-kick. In case of any infringement of this law the referee shall, on a claim by the opposite side, order a scrummage at the mark. The opposite side may come up to, and charge from, anywhere on or behind a line drawn through the mark and parallel to the goal-lines, and may charge as soon as the catcher commences to run or offers to kick or places the ball on the ground for a place-kick, but in cases of a drop-kick or punt the kicker may always draw back, and unless he has dropped the ball or touched it with his foot, the opposite side must retire to the line of the mark. But if any of the opposite side charge before the player having the ball commences to run or offers to kick, or the ball has touched the ground for a place-kick (and this applies to tries at goal as well as free kicks), provided the kicker has not taken his kick, the charge may be disallowed on an appeal.

IV. Penalties—11. Free kicks by way of penalties shall be awarded on claims by the opposite side if any player—

(*a*) Intentionally either handles the ball or falls down in a scrummage, or picks the ball out of a scrummage.
(*b*) Having the ball, does not immediately put it down in front of him, on it being held.
(*c*) Being on the ground, does not immediately get up.
(*d*) Prevents an opponent getting up.
(*e*) Illegally tackles, charges, or obstructs, as in LAW 8.
(*f*) Wilfully puts the ball unfairly into a scrummage.
(*g*) Not himself running at the ball, charges or obstructs an opponent not holding the ball.
(*h*) When any player not in a scrummage wilfully obstructs his opponents' backs by standing on his opponents' side of the ball when it is in a scrummage.
(*i*) Being in a scrummage, lifts a foot from the ground before the ball has been put into such scrummage. In this case the referee must allow a free kick to the opposite side without any appeal.

The places of infringement shall be taken as the mark, and any one of the side granted the free kick may place or kick the ball.

V. General—Ball in Touch—12. The ball is in touch when it, or a player carrying it, toueh or cross the touch-line; it shall then belong to the side opposite to that last touching it in the field of play, except when carried in. One of the side to whom the ball belongs shall bring it into play at the spot where it went into touch, by one of the following methods:—

(*a*) Bounding it on the field of play at right angles to the touch-line, and then run with it, kick it or pass it.
Throw-out—(*b*) Throwing it out so as to alight at right angles to the touch line, or
(*c*) Scrummaging it at any spot at right angles to the touch-line, between 5 and 15 yards from the place where it went into touch.

If the ball be not thrown out of touch so as to alight at right angles to the touch line the opposite side may at once claim to bring it out themselves as in (*c*).

13. **Try at Goal**—When a side has scored a try the ball shall be brought from the spot where the try was gained into the field of play in a line parallel to the touch-lines, such distance as the placer thinks proper, and there he shall place the ball for one of his side to try and kick a goal; this place kick is governed by law 10 as to charging, &c., the mark being taken as on the goal-line. It is the duty of the defending side to see that the ball is taken out straight.

Unfair Play—Allowing or Disallowing a Try—On an appeal the referee shall award a try if, in his opinion, one would undoubtedly have been obtained but for unfair play or interference of the defending side. Or he shall disallow a try and adjudge a touch-down if, in his opinion, a try would undoubtedly not have been gained but for unfair play or interference of the attacking side. In case of a try so allowed the kick at goal shall

be taken at any point on a line parallel to the touch lines, and passing through the spot where the ball was when such unfair play or interference took place.

14. **Ball held in Goal**—If the ball, when over the goal-line and in possession of a player, be fairly held by an opposing player before it is grounded, it shall be scrummaged five yards from the goal-line, opposite the spot where the ball was held.

15. **Drop-out**—After an unsuccessful try or touch-down, or if the ball after crossing the goal-line go into touch-in-goal or touch or cross the dead-ball line, it shall be brought into play by means of a drop-out, when all the kicker's side must be behind the ball when kicked: in case any are in front, the referee shall, on an appeal from the opposite side, order a scrummage on the 25 yards line, and equidistant from the touch-lines.

16. **Knock-on. Throw-Forward**—In case of a throw forward or knock-on, the ball shall, on a claim by the opposite side, be at once brought back to where such infringement took place and there put down, unless a fair catch has been made and claimed. If the ball or a player running with the ball touches the referee it shall there be put down.

17. **Pass or carry back over own Goal-line**—If a player shall kick, pass, knock, or carry the ball back across his goal-line and it there be made dead, the opposite side may claim that the ball shall be brought back and a scrummage formed at the spot whence it was kicked, passed, knocked, or carried back. Under any other circumstances, a player may touch the ball down in his own in-goal.

18. **Hacking, Tripping**—No hacking, or hacking over, or tripping up, shall be allowed under any circumstances. No one wearing projecting nails, iron plates, or gutta percha, on any part of his boots or shoes shall be allowed to play in a match.

19. **Irregularities in In-goal not otherwise provided for**—In case of any law being infringed in in-goal by the attacking side, a touch-down shall be awarded, but where such breach is committed by the defending side, a scrummage shall be awarded five yards from the goal-line, opposite to the spot where the breach occurred.

Other Irregularities not provided for—But in the case of any law being broken, or any irregularity of play occurring on the part of either side not otherwise provided for, the opposite side may claim that the ball be taken back to the place where the breach of the law or irregularity of play occurred, and a scrummage formed there.

20. **Close Time**—There shall be an annual close time, during which it is illegal to play football where gate-money is taken, such close time being between April 20th and the third Saturday in September in each year.

At the Annual General Meeting held September 20th, 1893, the following resolution was adopted:—"That this meeting strongly approves of the principle that the referee shall have sole control over the game and may blow his whistle without waiting for any appeal, and recommends that it be acted upon in matches in which both sides consent."

Regulations authorised by the Rugby Union on County Qualifications

1. A man may play—

(a) For the county in which he was born; or

(b) For the county in which he has resided for the six months previous to the time of playing; or

(c) For the county in which he is residing at school or college, either as pupil or master, at the time of playing, provided his residence at the school or college be in the same county; or

(d) For the county for which he played in season 1887–1888.

2. A man shall still be qualified to play for a county, having previously qualified for and played for that county for three seasons, and not having subsequently played for any other county.

3. No man shall play for more than one county during the same season.

4. A man who is duly qualified and plays for a county in a certain season may continue to play for that county during the remainder of that season, even though he loses his other qualifications.

5. Should any question arise as to qualifications, the same shall be left to the decision of the Rugby Football Union Committee.

Rules as to Professionalism

1. Professionalism is illegal.

2. Acts of professionalism are

(1) by an individual—

(A) Asking, receiving, or relying on a promise, direct or implied, to receive any money consideration whatever, actual or prospective, any employment or advancement, any establishment in business, or any compensation whatever for playing football or rendering any service to a football organisation; training or loss of time connected therewith; time lost in playing football, or in travelling in connection with football; expenses in excess of the amount actually disbursed on account of reasonable hotel or travelling expenses.

(B) Transferring his services from one club to another in opposition to rule 6.

(C) Playing for a club while receiving, or after having received, from such club any consideration whatever for acting as secretary, treasurer, or in any other office, or for doing, or for having done any work or labour about the club's ground or in connection with the club's affairs.

(D) Remaining on tour at his club's expense longer than is reasonable.

(E) Giving or receiving any money testimonial, or giving or receiving any other testimonial, except under the authority of this union.

(F) Receiving any medal or other prize for any competition, except under the authority of this union.

(G) Playing on any ground where gate money is taken during the close season; in any match or contest where it is previously agreed that less than fifteen players on each side shall take part.

(H) Knowingly playing with or against any expelled or suspended player or club.

(I) Refusing to give evidence or otherwise assist in carrying out these rules when requested by this union to do so.

(J) Being registered as or declared a professional, or suspended by any national union, or by the Football Association.

(K) Playing within eight days of any accident for which he has claimed or received insurance compensation, if insured under these rules.

(L) Playing in any benefit match connected directly or indirectly with football.

(M) Knowingly playing or acting as referee or touch-judge on the ground of an expelled or suspended club.

(2) by a club or other organisation—

(A) Paying or promising payment, or giving, offering, or promising any inducement as to employment, advancement, or establishment in business, or any compensation whatever, to any player for playing for that club, training, or for travelling expenses to or from any training resort, or for loss of time in connection with training, loss of time while playing or travelling in connection with football, hotel or travelling expenses in excess of the sum actually and reasonably disbursed.

(B) Receiving as a member a member of another club in opposition to rule 6.

(C) Receiving or continuing as a member anyone it may pay or have paid for either regular or occasional services.

(D) Paying for any of its teams, players, officials, or members on tour longer than a reasonable time, or paying for more than a reasonable number.

(E) Giving from its funds, subscribing, or playing a match for any testimonial.

(F) Giving any medal or other prize for any competition except under the authority of this union.

(G) Taking gate money at any ground during the close season, at any match or contest where it is previously agreed that less than fifteen players on each side shall take part.

(H) Knowingly playing or allowing its members to play with or against any expelled or suspended player or club.

(I) Refusing to produce its books or documents, or to allow its officials or members to give evidence, or to assist in carrying out these rules when requested by the union to do so.

(J) Knowingly playing or admitting as a member without the consent of the union any member of an expelled or suspended club, or any expelled or suspended player, or any person registered as or declared a professional, or suspended by any National Rugby Union, or by the Football Association.

(K) Knowingly allowing a player to play in its matches within eight days of any accident for which he has received or claimed insurance compensation if insured under these rules.

(L) Playing or allowing its ground to be used for any benefit match connected directly or indirectly with football.

(M) Knowingly allowing its members or teams to play on the ground of any expelled or suspended club.

(N) Refusing to pay within one month any costs or expenses ordered by this union for inquiries held under these rules.

3. For offences under 2 (1), A, H, I, L, and M, an individual shall be expelled from all English clubs playing Rugby Football, and shall not be eligible for re-election or election to any club. For offences under 2 (1), B, C, D, E, F, G, J, and K, an individual shall be suspended during the pleasure of this union.

4. For offences under 2 (2), A, D, H, I, L, M, and N, a club shall be expelled from this union.

For offences under 2 (2), B, C, E, F, J, and K, a club shall be suspended during the pleasure of this union. Any club disregarding a sentence of suspension shall be liable to expulsion.

5. When this union is fully satisfied that any offence under 2 (2), A, D, H, I, L, and N was of an accidental, trivial, or technical character they may suspend instead of expel.

6. When a player wishes to join a new club he may do so. If this union request it, he shall produce a letter from his old club, stating that they have no objection. On receipt of such letter this union shall give the necessary permission, unless they believe there may have been collusion, or that illegal means have been employed to induce the player to join the new club, in which case they shall hold an inquiry.

In case any club or clubs refuse to give written permission this union must hold an inquiry at the request of the player or of the club he wishes to join. If from any cause an inquiry be held this union shall have full power to order the payment of the costs of such inquiry, and of the clubs and witnesses, as it may think fit. This union may grant power to recognised governing bodies to increase the stringency of this rule, provided such proposed alterations be submitted to and approved of by it.

7. A county or club may insure its players either through a recognised insurance company or a fund entirely set apart for insurance, the accounts of such fund to be yearly audited by a professional auditor. Such audit to be made at the close of each season, and to be concluded, and the auditor's certificate lodged with this union, not later than the 20th May in each year, provided that—

(A) Any injured player does not receive more than 6s. per week-day while injured.

(B) Payments are only made on the certificate of a registered medical practitioner.

(C) Any player does not play football within eight days of his accident. If he does so, no insurance compensation shall be paid.

(D) Proper books of account be kept.

8. This union may hold inquiries into any alleged breaches of these rules at its pleasure, and shall do so when requested by any club or member of a club provided any such club or member make a preliminary deposit of £10 or such smaller sum as this union may determine, to be accompanied by a preliminary written statement of the chief known facts. After any such an inquiry, this union may return the preliminary deposit wholly or in part, and may order the expenses of such inquiry, of clubs and members implicated, and of witnesses, to be paid as it may determine.

9. At all inquiries under rules 6 and 8, correct notes must be taken.

10. Any club, member, or player affected by any decision given by a county, union of counties, or university under the delegation of powers contained in rule 11, may appeal direct to this union. Such appeal must be made within ten days, and must be accompanied by a deposit of £50 and a written statement of the grounds of appeal. After any such appeal, this union may return such deposit wholly or in part, and may order the expenses of such inquiry, of clubs and members implicated, and of witnesses, to be paid as it may determine.

11. This union may delegate to recognised governing bodies, such as counties, union of counties, and universities, powers to act for it in such cases and under such regulations as it may determine. All powers so delegated, and the bodies to whom such delegation be made, shall be published annually in the official guide of this union.

12. This union may appoint a sub-committee or committees to act on its behalf in all cases arising under these rules, giving such powers as it may determine.

13. This union shall have power to deal with all cases arising out of these rules, and with all acts which it may consider as acts of professionalism, and which are not specially provided for.

14. Where the word union is used in these rules, the committee of this union for the time being shall be understood, and in the delegation of powers the committee of the recognised governing body shall be understood. In case any difference of opinion arises as to the meaning of any of these rules, such meaning shall be decided by the committee of this union, or if it occurs at a general meeting, by the chairman thereof. Any such decision shall be entered in the minutes, and shall be accepted as the true meaning until otherwise interpreted by a two-thirds majority at a general meeting of this union after due notice had been given.

II. Association

Revised June, 1896

1. The limits of the ground shall be—maximum length, 200 yards; minimum length, 100 yards; maximum breadth, 100 yards; minimum breadth, 50 yards. The length and breadth shall be marked off with four flags, with staffs not less than 5 feet high, and goal and touch lines; and lines defining 6 yards from the goal posts and 12 yards from the goal lines shall also be marked out. The centre of the ground shall be indicated by a suitable mark, and a circle with a 10 yards radius shall be made round it. The goals shall be upright posts, fixed on the goal lines, eight yards apart, equidistant from the corner flag staff, with a bar across them, 8 ft. from the ground. The maximum width of the goal posts and the maximum depth of the cross bar shall be 5 in. The circumference of the Association ball shall be not less than 27 in., nor more than 28 in.; and in International matches, at the commencement of the game the weight of the ball shall be from 13 to 15 ounces.

2. The winners of the toss shall have the option of kick-off, or choice of goals. The game shall be commenced by a place-kick from the centre of the ground in the direction of the opposite goal-line. The other side shall not approach within 10 yards of the ball until it is kicked off, nor shall any player on either side pass the centre of the ground in the direction of his opponents' goal until the ball is kicked off.

3. Ends shall only be changed at half-time. After a goal is won the losing side shall kick off, but after the change of ends at half-time the ball shall be kicked off by the opposite side from that which originally did so; and always as provided in Law 2.

4. A goal shall be won when the ball has passed between the goal posts under the bar, not being thrown, knocked on, or carried by any one of the attacking side. If from any cause during the progress of the game the bar should become displaced, the referee shall have power to award a goal if in his opinion the ball would have passed under the bar if it had not been displaced. The ball is in play if it rebounds from a goal-post, cross-bar, or a corner flag staff, into the field of play. The ball is in play if it touches the referee or a linesman when in the field of play. The ball crossing the goal or touch line, either on the ground or in the air, is out of play.

5. When the ball is in touch, a player of the opposite side to that which played it out shall throw it in from the point on the boundary line where it left the field of play. The player throwing the ball must stand on the touch line facing the field of play, and shall throw the ball in over his head with both hands in any direction, and it shall be in play when thrown in. The thrower shall not play until the ball has been played by another player. (Note.—This law is complied with if the player has any part of both feet on the line when he throws the ball.)

6. When a player plays the ball, or throws it in from touch, any one of the same side who at such moment of playing or throwing is nearer to the opponents' goal line is out of play, and may not touch the ball himself, or in any way whatever prevent any other player from doing so, until the ball has been played, unless there are at such moment of playing or throwing at least three of his opponents nearer their own goal-line; but no player is out of play in case of a corner-kick, or when the ball is kicked off from goal, or when it has been last played by an opponent.

7. When the ball is played behind the goal-line by one of the opposite side, it shall be kicked off by any one of the players behind whose goal-line it went, within six yards of the goal-post nearest the point where the ball left the field of play; but, if played behind by any one of the side whose goal-line it is, a player of the opposite side shall kick it from within one yard of the nearest corner flag-post. In either case no opponent shall be allowed within six yards of the ball until it is kicked off.

8. No player shall carry, knock on, or handle the ball under any pretence whatever, except in the case of the goalkeeper, who, within his own half of the ground, shall be allowed to use his hands in defence of his goal, either by knocking on or throwing, but not carrying the ball. The goalkeeper may be changed during the game, but not more than one player shall act as goalkeeper at the same time, and no second player shall step in and act during any period in which the regular goalkeeper may have vacated his position.

9. In no case shall a goal be scored from any free kick (except as provided in Law 13), nor shall the ball be again played by the kicker until it has been played by another player. The kick-off, corner-kick, and goal-kick shall be free kicks within the meaning of this rule.

10. Neither tripping, hacking, nor jumping at a player shall be allowed, and no player shall use his hands to hold or push his adversary, or play in any manner likely to cause injury. No player may charge an opponent from behind, unless such opponent be not

only facing his own goal, but is, in the opinion of the referee, wilfully impeding his adversary while in that position. The goalkeeper shall not be charged except he be in the act of playing the ball, or is obstructing an opponent. (Note.—In the act of playing the ball means actual contact with the ball.)

11. No player shall wear any nails, excepting such as have their heads driven in flush with the leather, or metal plates or projections, or gutta-percha, on the soles or heels of his boots, or on his shin-guards. If bars or studs on the soles or heels of the boots are used, they shall not project more than half an inch, and shall have all their fastenings driven in flush with the leather. Bars shall be transverse and flat, not less than one and a half inches in length, and half an inch in width. Studs shall be round in plan, not less than half an inch in diameter, and in no case conical or pointed. Any player discovered infringing this rule shall be prohibited from taking further part in the match.

12. A referee shall be appointed, whose duties shall be to enforce the rules and decide all disputed points; and his decision on points of fact connected with the play going on shall be final. He shall also keep a record of the game, and act as timekeeper; and, in the event of any ungentlemanly behaviour on the part of any of the contestants, the offender or offenders shall be cautioned, and if the offence is repeated, or, in case of violent conduct, without any previous caution, the referee shall have power to rule the offending player or players out of play, and shall transmit the name or names of such player or players to his or their (National) Association, in whom shall be solely vested the right of accepting an apology. The referee shall have power to terminate the game whenever, by reason of darkness, interference by spectators, or other cause, he shall think fit, and he shall report the same to the Association under whose jurisdiction the match was played, who shall have full power to deal with the matter. Two linesmen shall be appointed, whose duty (subject to the decision of the referee) shall be to decide when the ball is out of play, and which side is entitled to the corner-flag kick, goal kick, or throw in. Any undue interference by a linesman shall be reported by the referee to the National Association to which the linesman belongs, who shall deal with the matter in such manner as they may deem necessary. The referee shall have power to award a free kick, in any case where he thinks that the conduct of a player is dangerous, or likely to prove dangerous, but not sufficiently so as to justify him in putting in force the greater power vested in him as above.

13. If any player shall intentionally trip, charge from behind, push, or hold an opponent, or wilfully handle the ball, within 12 yards from his own goal-line, the referee shall award the opposing side a penalty kick, to be taken from any point 12 yards from the goal-line, under the following conditions:—All players, with the exception of the player taking the penalty kick and the opposing goalkeeper (who shall not advance more than six yards from the goal-line) shall stand at least six yards behind the ball. The ball must be kicked forward. The ball shall be in play when the kick is taken, and a goal may be scored from the penalty kick; but the ball shall not be again played by the kicker until it has been played by another player. If necessary, time of play shall be extended to admit of the penalty kick being taken.

14. In the event of a supposed infringement of the laws, the ball shall be in play until a decision has been given.

15. The referee shall have power to stop the game for such a time as he may think fit, whenever he may deem it necessary to do so.

16. In the event of any temporary suspension of play from any cause, the ball not having gone into touch, or behind the goal-line, the game shall be re-started by the referee throwing up the ball at the spot where the play was suspended, and the players on either side shall not play the ball until it has touched the ground.

17. In the event of any infringement of Laws 2, 5, 6, 8, 9, 10, or 16, a free kick shall be forfeited to the opposite side, from the spot where the infringement took place.

Definition of Terms

A Place Kick is a kick at the ball while it is on the ground, in the centre of the field of play.

A Free Kick is a kick at the ball in any direction that the player pleases, when it is lying on the ground, none of the kicker's opponents being allowed within six yards of the ball, unless they be standing on their own goal-line. The ball must at least be rolled over before it shall be considered played; *i.e.*, it must make a complete circuit or travel the distance of its circumference.

A Place Kick or a Free Kick must not be taken until the referee has given a signal for the same.

Hacking is kicking an adversary intentionally.

Tripping is throwing, or attempting to throw, an adversary by the use of the legs, or by stooping in front or behind him; unless in the opinion of a referee a trip is intentional, no punishment shall be imposed. Thus, within the twelve yards line, a referee must enforce law 13, and has no power to mitigate the penalty.

Knocking on is when a player strikes or propels the ball with his hands or arms.

Holding includes the obstruction of a player by the hand or any part of the arm extending from the body.

Handling is understood to be playing the ball with the hand or arm.

Touch is that part of the field, on either side of the ground, which is beyond the line of play.

Carrying is taking more than two steps while holding the ball.

Memorandum Issued by the Football Association

(*a*) Any player leaving the field during the progress of a game (except through accident), without the consent of the referee, will be deemed guilty of misconduct, and will render himself liable to be penalised.

(*b*) The scale of charges for officials appointed by the Association shall be one guinea and railway and cab fares actually paid. When necessary for officials to arrive the night before the match, hotel expenses will be allowed.

(*c*) A player cannot act as linesman or referee during suspension.

(*d*) Membership of any club having a name similar to one already affiliated with the Association shall not be recognised or accepted.

(*e*) Associations and clubs are recommended to grant free admission to soldiers and sailors wearing her Majesty's uniform to football matches, where practicable.

(*f*) Linesmen are not considered players for the purposes of Rule 34.

(*g*) It is the duty of members of the Council, officials of clubs, and referees to report to the Council all cases of misconduct likely to bring the game into disrepute; and officials of clubs must report to the Council any infringement of rules without delay.

(*h*) Any professional player whilst under suspension by the Council for breach of rules, shall not receive any wages or moneys from his club without the consent of the Council.

(*i*) All clubs connected with the Association must have bills printed and posted in their grounds, threatening with expulsion any person who is guilty of insulting or improper conduct towards the referee.

(*k*) Any misconduct towards a referee away from the field of play will be dealt with in the same way as if the offence had been committed on the field.

(*l*) Clubs are expected to provide a private way for players and officials from playing-ground to dressing-room wherever this is practicable.

(*m*) No player is entitled to take the proceeds of a benefit match until he has been registered a professional.

(*n*) Second or reserve teams must be known by the name of the club to which they belong, as S——O 2nd, or S——O Reserve.

(*o*) A professional transferred must be re-registered by the club to which he is transferred.

(*p*) Registration forms signed on Sundays are not valid.

(*q*) A professional must not practise with any club but the one for which he is registered.

(*r*) Clubs obtaining signatures on Sundays are liable to be penalised: also for taking a player's signature on a second form before the first form has been declared by the Council to be informal.

The Council of the Football Association have placed the following interpretations upon laws:—

(*a*) All reports by referees to be made within three days after occurrence.

(*b*) In important matches it is desirable that linesmen should be neutral. Linesmen, where neutral, must call the attention of the referee to rough play or ungentlemanly conduct, and generally assist him to carry out the game in a proper manner.

(*c*) A player putting his leg from behind another player in order to get the ball, and thus throwing his opponent, shall be penalised for tripping.

(*d*) Wearing soft india-rubber on the soles of boots is not a violation of Law 11.

(*e*) The corner flag must not be removed when a corner kick is taken.

(*f*) The whole of the ball must have passed over the goal line, or touch line, before it is out of play.

FOX—There is perhaps no better abused animal living than the Fox. Yet the sport he shows may atone for any trifling amount of roguery and retain for him the good name he deserves, whilst his beauty is beyond reproach. His head and eye are intelligent and he has well-formed shoulders, round and deep ribs, back, loin and thighs of the most muscular description, and the whole covered with a thick coating of fur, of the cleanest, brightest and best. All is set off by a handsome brush or tail, sometimes tipped with white; such an appendage, which no other animal can boast, places him quite in the front rank for looks, whilst the lines upon which he is built are so well calculated for speed as well as endurance, that he is perhaps, taking him all in all, as near perfection as is possible to be.

But that handsome brush was not given to him as a set off to his beauty alone, but is of the greatest service to him; using it as a rudder, he can twist and turn at any moment when going at full speed, as occasion may require, without over-running the mark an inch.

In jumping he also brings it into action. When approaching a high wall, the brush will be seen to revolve rapidly, when, the impetus being given, over he goes, for a wall seven, eight or nine feet high is nothing for a fox to jump.

The brush is no doubt used in the same way in climbing trees. Unassisted by claws like those of a cat (he has only the toe-nails of a dog to help him), pug will sometimes be found upon the butt of a tree eight feet or even more from the ground. In an elevated position of this kind, he undoubtedly feels himself secure, and rightly so, for he is not likely to be sought for there, unless by chance or ill fate his whereabouts becomes known.

I may here mention that the white "tag" frequently causes mistakes to be made as to the sex of the animal, for it is generally believed by the uninitiated that this is given to the male only. This is not the case; sex has but very little, if anything, to do with it, for very often a whole litter will be possessed of that mark of distinction, whilst in another case not one will show it, yet in each there may be about an equal number of males and females.

The fox is well aware of the fact that he is hunted by scent; as is proved by his methods of self-preservation, and by the different tactics he will sometimes pursue in trying to baffle and beat his enemies. He has been known, among other dodges, when hounds are upon his line, to mount and run along the top of a wall for three or four hundred yards at a stretch, by which, if he does not shake off the pack altogether, he is likely at any rate to cause a long check and to gain a considerable advantage. Perhaps one of the most peculiar and effectual things he has been known to do is to roll in manure. This once came to my knowledge in this way. Hounds had been running very fast for some twenty-five minutes and got to a small covert, when a gentleman, a well-known sportsman, galloped on to the end of it to try to get a view. To his astonishment, there was the quarry outside the covert, rolling over and over at the bottom of a manure heap; this, as may be imagined, so foiled the scent as almost to save his life, for hounds could hardly hunt him a yard after. He was, however, quite beat, and the hounds were so close that they scarcely lost sight of him again, and in the end they rolled him over. I have had an idea of such a thing happening upon other occasions, from the sudden way that scent would sometimes disappear, but have never been able clearly to prove it either before or since.

He is gifted with many other clever devices for the purpose of his own protection, and likes to know the whereabouts of his pursuers, for which reason he generally takes a down wind course. If he starts up wind his journey will be short in that direction, unless he has in view an earth or some other place of safety which he hopes to reach. His method of stopping to listen on the way, which may be often observed by whippers-in who are clever at what is called "telegraphing," clearly proves his object; and when the cry of the hounds comes floating down the breeze, he starts off again at best pace, and the chances are that he will shortly run them out of scent altogether.

Feeding at night—A rover by night, he turns out soon after the setting of the sun and embarks upon his usual rounds in search of food, rabbits, rats, mice, beetles, &c.; of rats and mice he is particularly fond, whilst the number of beetles he gets is astonishing. I have picked up handfuls of "billets" showing nothing but beetles' wings, and whence he could have obtained such a quantity has altogether puzzled me. I remember once witnessing a very pretty, and, as I venture to think, very peculiar sight, when the whereabouts is taken into consideration. A fox mouse-catching in a field, and within twenty yards of a kennel where a pack of hounds is kept, is a sight certainly not often to be met with: this I saw one summer evening just outside the Puckeridge Kennels during Mr. Parry's mastership. Perfectly healthy, and sleek as a mole, there was pug, with wonderful agility springing from tuft to tuft, driving his nose into the sedgy grass, and at times picking up the tiny morsel, which he seemed thoroughly to enjoy, notwithstanding that a note might occasionally be heard from one or more of the fifty couple who occupied the benches hard by. From evening to early morning he goes on the prowl, and the distance he will sometimes travel is great, especially when love-making commences, and this will go on generally through the months of

January, February and March. During this time long runs may be expected; for whenever a pack of hounds is fortunate enough to come across a traveller of this kind, he is sure to give them something to do, and may at the finish leave them baying outside an earth some ten or twelve miles distant.

Having returned from his midnight excursion, with contented mind and nothing indigestible in the stomach, he will curl himself up, lick his pads and, with brush around his nose, retire for rest, probably in a nice warm spot under a heap of briars, well sheltered from storm or wintry blast, and there wait the course of events by sleeping soundly. He may or may not be disturbed a little earlier than he anticipates, but at any rate he has a quick ear, and any enemy or intruder must be very gentle if he approach anywhere near the lair of the wily one, without putting him on the alert.

The huntsman's voice is as well known—if not so highly appreciated,—by the fox as it is by the very hounds which are cheered on to his destruction, and the moment he hears it he prepares for action by arousing himself from his lair, stretching his limbs, and giving himself a shake, when he listens again and steals away. On arriving at the edge of the covert, he will take a sly glance round to see if the course is clear. If so, and no voices are heard (gentlemen should never talk when standing at the corner of a covert), he will perhaps, if opportunity offer itself, for the sake of privacy choose a hedgerow to run beneath; then, with a whisk of the brush, dart off, and in all probability will give his pursuers something to do before the end comes, whatever the result may be.

Preserving—The best way of preserving foxes is to leave them alone; they require no other protection. Where they happen to be scarce, and it is necessary to import some, the best way is to get strong cubs, half-grown or more if possible (not things that have been kept up, but direct from their native home), put them into the earth at once, peg them in by driving stakes down at the mouth, and keep them there for a week or so. Feed them liberally on rabbits or rats, and at the end of the time pull up the stakes and leave them to their own resources: if they are strong they will be able to catch a rabbit for themselves and do well; the covert will be their play-ground, the earth their castle.

I have known foxes imported from Canada, but no good came of it: cubs from the Highlands of Scotland or the Welsh mountains are best and will be found an excellent change of blood.

Mange—The artificial way of rearing cubs which has come into existence during the last twenty years, is bad in the extreme, bad in every sense of the word; nearly every case of that dreadful disease, mange, springs from it.

The modern style, where the little red rover is not allowed at all times to roam at his leisure, is to keep up some cubs perhaps in a filthy dog-kennel, feed them on unnatural food, and, at a certain time, turn them down. Thereupon, or shortly after, mange is sure to break out.

As far as the hunt is concerned, it would be a thousand times better to find no fox at all. He cannot possibly do any good, but on the other hand must do an immense amount of harm. Mange is a terribly contagious disease, and any travelling fox from a distance may come in contact with it at any time, and so it quickly becomes spread over a wide space of country. There is no doubt that one mangy fox will do more harm among pheasants and poultry than a dozen healthy ones. The latter seek their food by night, when pheasants are at roost in the trees and out of reach, while the poultry are, or should be, locked up in safety; but both will fall an easy prey to the three-parts tame, hand-fed brute, who rests neither night nor day, the awful scourge which is upon him forbidding it. He is frequently seen by day moping about round "home," his only chance of gaining a livelihood; too weakly to go out at night and pounce upon rabbit or rat like his more healthy kinsmen, he crawls about in his agony by day into pheasantry or fowl-house, slaughtering whatever comes in the way. His natural instincts of obtaining a living have left him, and so he goes on growing weaker and weaker, until, if nothing else puts an end to his sufferings, he will in all probability be found eventually dead in or near some cart-hovel or other out-building, covered with scab from the nose to the tip of the tail, and near to the spot where he has been so mistakenly reared. To try to have foxes in the winter, and not in the summer, is to try for something which cannot be accomplished! The genuine article *or none* is best.

I have before now seen a good run with a mangy fox in the first stages of the disease, but let there be no mistake about it; this was not one of the hand-reared ones, but the traveller from a distance, who had unfortunately visited the haunts of the latter, and so contracted the disease. So much for mange and its dire effects.

Cubs at Play—There is no prettier sight to be seen on an evening in spring or early summer than a litter of cubs at play.

The activity displayed in skipping about, bouncing in the air, turning somersaults, playing hide and seek round a tree and cutting other capers is most amusing. For the purpose of observing this charming sight, it will be necessary to get on the down wind side of the earth where the cubs are known to be, making as little noise as possible in getting there, and then remaining perfectly silent; or a better way still is to climb a tree, perch yourself comfort-

ably on one of its branches and there wait patiently their arrival. Presently the boldest of the litter will appear at the mouth of the earth, sniffing about on the ground and then darting back again. In a short time he will reappear with some of his brothers and sisters, a little more confidence is gained that all is right, and sports at once begin.

The chances are, too, that you may see the old vixen, who has gone out in the early evening to obtain something substantial in the way of food for her little ones; she returns with, most likely, a rabbit in her mouth, when the cubs will meet her, and a rare scuffle for the booty takes place. The rabbit will be taken, or rather dragged, into the earth, and probably in a few minutes the vixen will return to have a look round, taking a careful glance and winding in each direction: and if she obtains the smallest suspicion that you are in the neighbourhood, the odds are great that you will see, however much you may wish it, neither her nor her cubs again that night.

Mistakes are often made as regards the number of litters there are on a place, especially if there happen to be two or three earths in fairly close proximity. In such a case a fox with her cubs may not confine herself to one, but will perhaps use them all, keeping two or three homes going at one time, travelling backwards and forwards as she pleases, and the traffic that is made will give it the appearance of two or even three litters, when in reality there is but one.

Stub bred foxes—It is not always the case by any means that foxes are bred underground, and it is generally considered that stub bred foxes, as they are called, are the best, for the simple reason that they are not so much trouble to keep above ground when found by hounds, and every hole and drain is not so familiar to them as naturally it will be to others. In large woodlands, cubs will sometimes be found in hazel stub or root of tree, and the chances are, too, that they are as safe there as anywhere else, their greatest danger perhaps being from hounds in spring hunting. Not that I think one or two hounds would degrade themselves by swallowing up little cubs, but if several of them should by chance get down to the place at once, one might do it for fear another should. I was once a good way forward, looking down a ride in a wood, the huntsman being almost out of my hearing, but not of an old vixen fox, who came over the riding shortly after I arrived, with a cub in her mouth, stopping and turning her head to listen and then going on again. She evidently had her cubs above ground, and commenced to move them, as she thought, to a place of greater safety the moment she became aware of hounds in the neighbourhood. I at once informed the master of the fact, and hounds were taken to another covert without delay.

Earth-stopping and Badgers—It is very important that earth-stopping should be done thoroughly and well, and also at the proper time, or foxes may be stopped in the earths instead of outside. The easiest and best way, as a rule, is to have a faggot well tied (one end smaller than the other) for each opening; at night, when reynard is out on his rounds, the stopper should go and jam the faggot into the earth as tightly as possible: the next evening, when the hunt is over, all that is necessary is simply to withdraw it and lay it aside for future use. This is much better than the old-fashioned plan, of which we are sometimes reminded in pictures, where the venerable earth-stopper is seen marching off on his rounds, with candle and lantern, pick and spade.

Badgers are a great nuisance to an earth-stopper, for, with their long and strong claws, which are so well-shaped for the purpose, they can open out any earth at will, and in a very short time into the bargain: moreover they are deadly enemies to cubs. I know there are those who do not agree with me in this, but there are many who do; old George Carter of Tedworth fame, among others of great experience, always declared it, and I have myself on different occasions found dead cubs at the mouth of earths with tusk marks penetrating the brain, evidently from the chopping bite of the badger.

I do not intend to convey the idea that he would trouble himself to go out of his way for the purpose of killing a cub. He is too fat and lazy for that, and indeed there is no necessity for it, as it is well known that badgers and foxes will and do use the same earths, having separate compartments inside. But let the badger meet a cub either inside the earth or at the mouth of it, then the odds are great that that cub will never live to show a run over a country.

Fox Coverts—In countries not possessed of woodlands, it is sometimes necessary to make coverts, and when this has to be done there is nothing to beat the good old-fashioned gorse; this can be sown, or two or three year old plants put in; perhaps sowing is the best. In either case it is a mistake thoroughly to clean the ground. Some think differently, but the grass which springs up is a great protection to the young plant in winter, as well as forming a warm and comfortable lair for the fox.

Early in April is a good time for sowing the seed, and it should be drilled, not too thick, and with about fourteen or fifteen inches between the rows. A grass field is best for the purpose. Plough it up, put in the seed, harrow, and roll with Cambridge roller: the grass will soon come through, and, as before stated, will protect the young gorse in winter, and make a bed for the fox, who will be found there much earlier and more regularly than if there were nothing but the bare cold ground to lie upon.

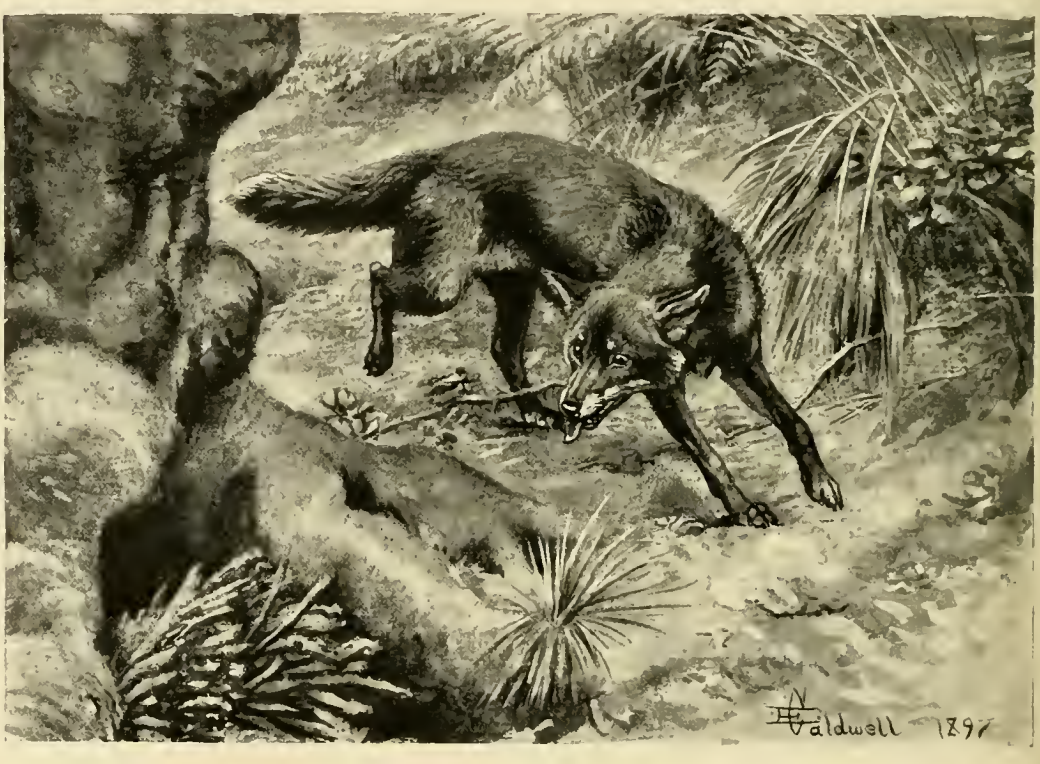
Thorn or privet coverts are good in their way, and very hardy, but should not be planted too thickly, neither should they by any means be afterwards cut and "laird," as I have on some occasions seen, leaving only sufficient room for hounds to crawl through underneath. In the case of thorn coverts, with spikes sticking into them from every direction like porcupines' quills, they are totally unable to bustle a fox and drive him away. This is quite a mistake, as it is by no means necessary, for the purpose of holding, that coverts should be so desperately thick; besides, it has a tendency towards making bad foxes. With a bad scent inside, they are able to hang about, and much time may occasionally be spent there which would be better occupied in running over the open.

Quiet is the thing which is absolutely necessary: coverts should remain undisturbed as much as possible except by hounds; and if the noble animal dwells in the neighbourhood, he is sure to make it his abode, and a find, once a fortnight at least, will be next to an absolute certainty.

A Good Fox—Naturally a good fox is he who shows the longest and straightest run, but unfortunately their number in most countries is small. One reason for this is that they do not travel such a great distance for their food, and become acquainted with so large an extent of country as we are told they did in years gone by. Another reason is, that the fox who has a tendency towards running straight, does not, as a rule, live to run many times; being so much easier to hunt, his chance of carrying off his brush in safety is much slighter than that of the dodging, twisting customer, who makes every available turn, running up one hedgerow, down another, &c., causing a check at almost every one, and thereby reaping so great an advantage.

Remarks may not infrequently be heard after a straight run,—"How splendidly they hunted him, no hounds ever deserved a fox more, &c.," when the fact is, their task has been made easy by the straight course taken; and although hounds always deserve blood after a persevering hunt, they deserve it much more with a bad fox than a good one, for their difficulties are far greater. When a bad, short-running fox goes to ground for instance, if he can be got out and despatched, so much the better, for he is the sort to blood hounds with. (It must be borne in mind that it is necessary to keep hounds well in blood.) On the other hand, if a fox makes a point of seven or eight miles, or as many more as you like, and goes to ground, cheer hounds at the earth to the very echo, rejoice over it as if you had him, but by all means leave him there. He is the sort you want for another day.

T. FIRR.



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A Poucher

FRANCOLIN—These birds, nearly allied to the partridges of Europe, are found in most parts of Africa, often very abundantly. In South Africa alone there are some ten or eleven species. Some of these prefer thickly bushed localities, and roost on trees or bushes; these are always called by the colonists "pheasants." Other francolins, which inhabit more open country and at night remain upon the ground, are the best sporting birds, and are invariably known as "partridges." In Cape Colony excellent shooting is obtained with the "redwing" and "greywing" "partridges," known to scientists as *Francolinus levaillanti* and *Francolinus afer* respectively. Beyond the Orange River another "redwing," the Orange River francolin (*F. gariepensis*), and the beautiful little Coqui francolin (*F. subtorquatus*) afford the best sport, and very pretty shooting is often obtained with them. Pointers are usually employed for finding these birds; indeed, without the aid of a sporting dog but poor shooting would be obtained. A bag of from ten to twenty brace of these francolins can be secured by a couple of guns in localities where they are fairly numerous. Bechuanaland is one of the best grounds in South Africa for francolin shooting. The bush-frequenting francolins, or "pheasants," afford, from their running and perching habits, much poorer sport than the francolins found in open country. With the exception of the Coqui francolin (*Nzwimpi* of the natives), all these birds exceed the English partridge in size and weight, the "pheasants" more especially. The flesh is fairly good eating, if somewhat dry.

One of the largest species (*F. jacksoni*) has been discovered in recent years by Mr. F. J. Jackson in Eastern Africa (*Masailand*). Another very fine species is Erckell's francolin, found in Abyssinia.

Although of the forty odd species of this game-bird at present known to scientists a large proportion are found in the African continent, some remarkable members of the family inhabit Asia. In parts of Asia and India, fair sport is occasionally to be obtained with various kinds of francolin. The Black Francolin (*F. vulgaris*) was formerly fairly abundant in Southern Europe, in Spain, Italy and Sicily, but is now to be found no nearer than Cyprus, whence its range extends to Palestine, Asia Minor, and as far East as Northern India.

This game-bird is well known in Southern Beluchistan and Afghanistan, upon the plains of Southern Persia, in Mesopotamia, and the region of the Caspian. In India, where it is known as the Black Partridge, it affects the river valleys and is found in high grass and tamarisk, often in the vicinity of cultivation. So lately as 1880, fifty brace of these birds have fallen in India to a single gun in a day's shooting; but, at the present time, it may be doubtful whether so good a bag could be made. Among the other well-known Asiatic francolins may be mentioned the Painted Francolin (*F. pictus*), familiar in India as the Painted Partridge. This bird is found in parts of Southern, Western, Central, and Northern India, in fairly open country, and affords good shooting. A steady pointer is very useful here, as in South Africa. Another well-known species is the Chinese Francolin (*F. chinensis*), found from the valley of the Irrawaddy as far East as Hong Kong, amid bushes, ferns, and bamboo-clad hills. This francolin is hard to flush, but has a strong flight when roused. Phayre's Francolin (*F. phayrei*) is abundant in Upper Burmah. Nearly all the francolins are provided with sharp spurs, and the males fight fiercely in the mating season. Even the tiny Coqui francolin of Bechuanaland and the interior of South Africa is armed with strong and extremely sharp spurs, which, with the legs, are of a brilliant orange-yellow.

FRANCOLIN.

H. A. BRYDEN.

GAMEKEEPERS—Great changes have taken place in the duties of the gamekeeper during the last twenty years. Formerly the protection of game and the showing of a fair head on shooting days were practically all that was required. Any keeper, however ignorant, if sober and honest, was then, at least to some extent, competent to accomplish this. Now, however, when the rearing of game and the management of a shooting are reduced to a

science, intelligence is indispensable to success. Poaching also, it must be noted, has been reduced to a science, and the nocturnal visits of the poacher with his stretches of nets and india-rubber shoes require skill, discrimination, and patient perseverance to be successfully dealt with. Even when there is a happy combination of all these, large quantities of both winged and ground game sometimes disappear in a single night.

The operation of the Ground Game Act has tended further to increase the difficulties of the keeper, and to render his position all the more embarrassing, for no amount of vigilant intelligence can subvert the drastic provisions of an ill-advised and disappointing legislative enactment. While an ignorant and indiscreet keeper is apt to bully and quarrel with farmers, the wise man, even when there is much provocation, will accept the inevitable and strive to exhibit a courteous demeanour towards them, so long as, in the exercise of their rights, they respect the statutes by which these are defined.

A keeper's books should be periodically examined by the estate auditor, but care should be taken to allow him the entire management of his own department. When he has the whole responsibility on his own shoulders, and knows what is expected of him, he feels it to be his interest to show good results and to compete in these respects with neighbouring keepers. Where there is a large consumption, a great saving can be effected in maize alone, in buying from honourable firms, who do not grant commissions (to the pecuniary injury of the proprietor and to the demoralisation of the keeper). Let the latter know that he is upon his honour and that his merits are appreciated, and this will go far to fortify him against giving way to temptation.

Pheasant-rearing—The rearing of pheasants is an important duty, and requires skill and patience alike to make it a uniform success. On most estates pheasants are captured and put in pens, in order that eggs may be secured for this purpose. There are so many devices for catching the birds—each one thinking his own the best that it is unnecessary to refer to them here. The pens should be pretty long, with a door at each end, and a screen in the middle, in order that when a person goes in at one end the birds may run to the other and be out of sight, otherwise they are apt to fly and dash themselves against the wire. By careful and judicious feeding the number and fertility of eggs can be increased.

When the period of incubation has nearly expired, and the eggs are commencing to chip, they are sometimes removed from beneath the hen and put into an incubator. By this means the chicks are not trampled upon by the hen. If two eggs are left beneath a hen, the chances of loss by trampling are reduced to a minimum. But should a loss occur in this manner with only two chicks, it would be well to discard the hen at once from further service in pheasant-rearing. If, however, she appears to be a good mother, put her in a coop with the complement of chicks.

Turning down—Considerable difficulty is experienced in turning down pheasants in the cover which is to be their permanent home. Perhaps the best arrangement is to place the coops on a lorry which can carry a considerable number at once, convey them to the ridings in the woods, and put them in their respective positions. Up to this time the chicks are amenable to the call of their foster mother, and under her maternal care are soon reconciled to their new environment. They are now picking small maize, so that biscuit meal and other expensive foods may be more sparingly used. Prompted by nature, pheasants, before they are full grown, take to roosting in trees. The keeper then feels a sense of relief, as they are now practically safe, unless it be from vermin. Should a litter of fox cubs take up their abode in the woods, the destruction is incalculable. The intelligent keeper, however, knows at once if a stray cat, dog or fox, be in the wood. The warning cackle of a cock pheasant, the screeching of a jay, the excited piping of blackbirds and other birds, or the disturbed movements of any living thing, quickly notify to his practised ear that an enemy is abroad.

Foxes—Fox-hunters frequently assert that the fox does little damage to pheasants, and advance the most ingenious though unconvincing arguments in support of their assertions. From long experience in a hunting country, and having reared pheasants in the midst of foxes, I can here speak with confidence. On more than one occasion I have known a fox make a raid among the coops in the early morning, when the birds had commenced to sit out. Once, when watching in the rearing field on an estate in Berwickshire, and when partially asleep, I was aroused by a disturbed noise among the hens. On looking up, reynard was stealthily withdrawing from among the birds, but not until several had been destroyed, although none of them were carried off. The skilled keeper will on such occasions as these note the "airt o' the wind," as in no case will the fox approach from the lee side of the watcher.

Badgers—Badgers, although by no means so numerous as they once were in this country, must be classed among the enemies of the gamekeeper. While not indifferent to the luxury of a pheasant or partridge nest, or young brood, he is chiefly to be dreaded for his wholesale destruction of young rabbits. With unerring instinct he discovers the exact spot, although several feet below the surface, where the young rabbits have been deposited in their nest. It is to the badger a matter of no moment how many young the nest contains,—he makes a speedy clearance and renders a second visit unnecessary.

Vermin—The domestic cat, more especially when in close proximity to villages and agricultural steadings, proves a destructive pest to the keeper, and can only be kept in check by the free use of traps planted in and around the preserves.

Polecats, stoats, and weasels also claim the watchful attention of the gamekeeper. There is a ferocious and bloodthirsty instinct characteristic of these animals which is most hateful to the game preserver. They prosecute their work with a merciless persistency, which can only be satisfied by the blood of their victims. All of them seem positively to revel in the destruction of innocent and helpless birds and animals. They appear in some measure to possess the additional characteristic of being well-nigh ubiquitous. The keeper may have concluded, and that accurately, that he has cleared the entire estate of them, and yet within a few days thereafter he will be surprised to find the reappearance of one or more of the stoat species. This arises from their restless activity, for distance seems to be no obstacle to them. I have tracked the stoat for surprisingly long distances after a fresh fall of snow. A few years ago I was asked by a New Zealand Land Company to secure some hundreds of stoats and weasels in order to have them transported to that colony with the view of counteracting the rabbit plague. Within a short period it was discovered that some of them had travelled a distance of ninety miles in order to get round the head of a river and lake. Endowed as they are with such travelling powers, and with their bloodthirsty habits, it is easy to see that their presence cannot be tolerated in a game preserve.

The hedgehog is another enemy, and, from its habit of eating eggs, is much more destructive in the nesting season than most people imagine. Occasionally finding its way into coops among young pheasants in the dark, it does much mischief; and that old hens are killed and disembowelled by hedgehogs is a well attested fact, despite the sneers of acknowledged authorities on sport.

With the destructive habits of rats every one is familiar. Snaring instead of trapping has also afforded them opportunities for taking possession of rabbit holes. Nothing comes amiss to the rat; fish, flesh, fowl and vegetables are greedily devoured. When rats grow large they become very savage, and will kill every kind of young game they can get hold of.

Hawks—The hawk species, from the eagle down to the merlin, must ever engross the attention of the intelligent gamekeeper. There is an absolute pleasure in watching the habits of these winged marauders which affords to the naturalist a motive for the study of their peculiarities other than that which seeks to compass their destruction. The game preserver has chiefly to guard against the peregrine falcon, the sparrow-hawk, and the merlin, and, of the Corvidæ, carrion crows, ravens, and magpies. No mercy should be shown to any of these, but there are a number of others the destruction of which should be left to the good sense of the keeper. Among these may be mentioned rooks, jays, jackdaws, kestrels, and owls. The three first mentioned do damage chiefly to eggs, though very young game are by no means safe from their depredations. Kestrels in some cases are destructive to pheasants, partridges, and grouse. Owls may be included in the same category, although, when large quantities of mice are available, birds are not likely to suffer much. Indeed, mice would seem to be their normal food, as was strikingly illustrated in Scotland a few years ago, when the southern counties had a special visitation of a mice plague. It is a fact worthy of being remembered that owls were then to be found in immense numbers where the plague was most severely felt. Their arrival was almost simultaneous with the development of the plague, while it was noticed that they disappeared from the district with its abatement. It must not be supposed, however, that, where mice are not attainable, owls do not "harry" the nests of our singing birds. Tawny owls, in particular, during the nesting season, frequently feed the owlets with small birds and young game. Of this I have seen repeated examples.

Dogs—The efficient gamekeeper will ever be careful regarding his kennel, not merely seeing that the accommodation for his dogs is dry and comfortable, with an abundant supply of pure water, but that the conditions for the health and comfort of his dogs are such as he would like to provide for his own household. He will also see to the pure breed of his dogs, and that they receive a training which will afford to the sportsman enjoyment when they are shot over, altogether apart from that realised by the use of the gun. The positive torture arising from badly trained and untractable dogs partakes largely of the character of a nuisance. At the same time, however pure the breed, and however satisfactory the conditions in which dogs may be kept, perfection is neither to be secured nor expected except with considerable experience among game.

TOM SPEEDY.

Wages—A really good head-gamekeeper is invaluable to his master, and therefore he is not often overpaid, whatever the size of the manor may be. As for the underkeepers, they usually receive the maximum wages of agricultural labourers in the district, or a little more, and cottages and gardens rent free. A cow is often a useful help to a head man, if he has young children; but more than this is not advisable, as it is not well that keepers should be farmers.

Beaters had better be paid by the head keeper, and half-a-crown a day is a fair wage,

with bread, cheese and beer, which the keeper may with advantage provide, as it saves friction with the house kitchen and pantry. While on this subject it may be well to suggest that the master should find out from the keeper whether the loaders, whose luncheon will doubtless be sent from the house with that of the shooters, have had food enough, for sometimes they do not fare very well. The subject of presents is cognate to that of wages, but it is a very delicate one; suffice it to say that a considerate guest is apt to give a little more to a man whose master only has a few days' shooting to which to invite his friends, than to the servant of the proprietor who has a party every other week throughout the season.

Game Production—In order to have a good supply of game on any ground, it is essential to keep it quiet, and to be able to keep away trespassers (and, of course, poachers) who have no business to be there at all, and also to be on good terms with those who must be present in order to follow their respective vocations in life, such as shepherds, labourers and farmers. Shepherds and farm-servants can help in the preservation of grouse and partridges in the most material way, and, if they are friendly, and if vermin is duly kept within bounds, a great deal is done towards a good stock of birds. In the case of grouse, if the control and judicious burning of the heather is added, little more is necessary. With partridges it is well to change the blood sometimes, either by turning out some imported birds at the end of a season, or by changing eggs with a neighbour, or from one side of a manor to another. There is no harm in rearing artificially eggs taken from nests disturbed in mowing, or otherwise in dangerous places; but the young ones are not easy to bring up, and afterwards do not afford very satisfactory sport, as they pack so readily, a great disadvantage if they are to be walked after, and also inconvenient for driving. In severe winters, when there is much snow, something may be done by a little judicious feeding of partridges in sheltered places, and the keepers' vigilance must then be doubled, as the coveys afford a tempting mark on the snow to the prowling gunner.

Shooting—It is not enough at the present time for a keeper to have woods full of pheasants, or fields full of partridges, but he must be clever enough to manage that they should be killed in a satisfactory way. To plan a large day's partridge-driving is as difficult a task as carrying out the plan when made. The keeper must know his men, be able to trust them when at a distance, especially when there are two sets of beaters out, and must be careful to judge accurately when to start the next drive, after one is over, so as to give reasonable time for picking up. He must not hurry the guns unnecessarily to their next station, nor keep them waiting too long when they have reached it. Then he must be sure to know whither the bulk of the birds have gone, and to vary his plan when necessary, so as to bring them back into the drives. The master can help materially in the management; but the most accomplished sportsman will usually find himself helpless, unless his keeper comprehends the various objects aimed at, and the right methods of attaining them.

The art of beating a covert may perhaps be less difficult than that of driving a country for partridges, but even here there is great scope for failure or success. The stops must be in their places long before the actual beating begins, and some trusty person must see that they do not leave their posts; for the result of a stop going away from where he has been ordered to stand is usually most disastrous. The beaters, too, must be under strict control, trained to keep line, to hold their tongues, to go through the thickest thorns and brambles, and to be always listening for orders and looking under their feet to see if they can pick up anything. But the most faithful stops and the most accomplished beaters are not enough; for even when all the pheasants are where they ought to be, it is most difficult to put them up satisfactorily, and this art many keepers, excellent in other ways, can never properly acquire. Some men can never help putting the greater part of a corner full of pheasants up in one flush, which is most distressing to all concerned, while others will never fail, even on ground where it would seem impossible, to send out their birds by tens and twenties at a time as long as there are any left in the thicket, though the process may last during an indefinite period.

Nor is this all. It is nowadays by no means thought enough to surround a corner with guns and drive out several hundred birds close to the heads of the shooters. They must be made to fly well; and to this end much skill and care must be directed; advantage must be taken of the slope of the ground, of the height of the trees, and of the way the pheasants would go by choice. It is far easier to make them fly properly if their heads are turned towards the place from which they have come than if they are being forced away from home on to unknown ground. To the modern shooter it makes all the difference whether the birds come well or not, and the day's sport is thought good, or the reverse, almost completely according to this test, so that it is absolutely necessary to attempt to make the birds fly well.

Picking Up—A good gamekeeper must have a good retriever. Walking up birds in line and driving them have banished pointers and setters to grouse-moors, and even on these they are being used less and less, but the retriever takes their place. It is unnecessary to say that he (or she) must be able to smell, be trained to

obey, and have a soft mouth; but it may be useful to observe that, in addition to these indispensable attainments, quickness is a valuable quality to cultivate, especially for a keeper's dog, which need not be quite so perfectly broken as that of a gentleman. Indeed, in these days gentlemen's dogs are usually more ornamental than useful, and, except for grouse- and partridge-driving, had better be left at home. Not only the head keeper, but all his principal assistants, should have good dogs; and in covert shooting, whenever and wherever any guns are stationed away from the line of beaters, there should always be some one behind them with a dog, no matter whether it is an important stand or not. This is advisable in the interest of sport as well as of humanity, as it is very difficult and distracting for a gun and his loader to have to be thinking all the time where this or that bird fell, so as to be able to tell the keeper, when the line at last comes up. Good picking up is a most comforting thing to sportsmen, and it is not invariably attended to as well as it should be. After any ordinary day the ground must be hunted over by men and dogs as soon as possible, and it is for the master to see that this is done properly.

Too large a "pick up" means that the work was not properly done on the day itself, and too small a one often implies subsequent neglect. It has been observed that, as regards pheasants, about six or seven per cent. is a very common proportion under good ordinary management, so that much more or much less than this is a result which should be investigated.

Hares and Rabbits—Hitherto these remarks have been confined to the keeper's relations with feathered game, but there are such things as hares and rabbits, and it is hardly well to ignore them altogether. Hares are not good shooting at any time, and it is a pity, for the sake of good sport, to encourage them unduly anywhere; but a good keeper ought to do his very best to have an adequate number on any ground in his charge where they will exist at all, because a proper quantity of hares on any shooting is the surest proof that farmers are friendly and poachers absent.

Rabbits are not seldom a source of strife between master, keeper, agent, and tenant, and it is impossible to offer any general suggestions as to how the ideal keeper should deal with them. A rabbitless wood is a most delightful thing to its owner all the year round, except on the days when he shoots in it; but on those occasions it is apt to be voted dull, and then the difficult problem arises, of how to manage to have enough rabbits, and yet not too many.

It is quite easy to have none, it is easier to have swarms, but it is not at all easy to be able to make sure of killing a suitable number, and yet not to let them be a source of mischief. In spite of what people often say and believe, rabbits do far more harm inside a covert than outside it. Not much rabbiting can be done in a wood, where there are to be some pheasants as well, between March and the time when it is shot through in the following winter; but after that has been done once or, better still, twice, the keeper and his staff should kill rabbits there as hard as they can, till the spring is fairly started, not with guns, but with all other available engines; and if this is properly attended to year after year, there will not be much cause of complaint left either for the agriculturist or the lover of trees.

H.

GAME LAWS—Probably no set of laws have undergone so complete a change from their original purpose as the Game Laws. Denounced as relics of feudalism and barbarism, and as the means of oppression by landlords of tenants, they have become a valuable source of revenue to the country. Their abolition is often spoken of, but the tendency at the present day is rather to extend their operation than to repeal them. The whole of the Modern Wild Bird legislation shows this. For the purposes of this article the Game Laws may be grouped under four heads. 1. Who may kill game. 2. When game may be killed. 3. Where game may be killed. 4. How game may be killed.

Each of these requires separate consideration.

Who may Kill Game—Any of the Queen's subjects may kill game, provided he qualifies himself by taking out a proper license from the Inland Revenue. That is the only qualification now required. Before 1831 a person, to be entitled to kill game, had to possess a qualification; he had to be an esquire or person of higher degree. That was then abolished, and now a license is all that is necessary to enable a person to kill game. But every one must have a license, whether he kills game on his own land or on another person's. The licenses are of three kinds, and vary in price; they may be for the whole season, or for part of the season, or for game-keepers. Those who take out licenses for the whole season are entitled to sell the game they kill, those who take it out for part of the season are not. Every one killing game legally must have one of these three licenses. Game is defined by the Game Act, 1831, as including hares, pheasants, partridges, grouse, heath or moor game, black game, and bustards; and this is the standard definition of game. There are other definitions which include other kinds of birds for the Night Poaching Acts, the Poaching Prevention Act, and the Excise Acts. By the Ground Game Act, hares and rabbits have been put into a class by themselves as ground game, and special rules apply to them. The confusion is made worse by some of these Acts applying to England only, others to England and Scotland, others to the United Kingdom. So the definition of game differs in England, Scotland, and Ireland.* So far as killing game goes, the importance of the definition only relates to the sum to be paid for duty, as a gun can only be legally used if either a game or a gun license has been obtained; the holder of a game license does not require a gun license, but the holder of a gun license requires a game license. As distinguished from other animals and birds, special forms of protection are given to game, and the penalties are higher for illegally killing it; but as regards the question, "Who may kill Game?" the answer is, "A person who has taken out a proper license." It must not, however, be imagined that a properly licensed person has a right to kill game when, where, and as he pleases. There are certain modes of killing game that are illegal, and which no one may use. Game can only be killed at certain times of the year, and a licensed person cannot kill it except at these times; and no one has a right,

however much he may have paid for license duty, to go on land and kill game, unless he has the right or permission to do so.

When Game can be Killed—The Game Act, 1831, fixes for England the times for killing game. No one may kill game on any Sunday in a year or a Christmas Day. Partridges may be killed on week days between September 1st and February 1st. Pheasants between October 1st and February 1st. Black game in Devon, Somerset, and the New Forest between September 1st and December 10th, elsewhere between August 20th and December 10th. Grouse between August 12th and December 10th. Bustard between September 1st and March 1st. For all birds not game, the time for killing is between August 1st and March 1st, unless in any particular county the time has been altered by the County Council. There is no close time for *eating* hares, but they may not be *sold* between March 1st and July 31st. Rabbits may be caught and sold all the year round. Substantially these times are the same throughout the United Kingdom, but there are some slight variations. Game and wild birds killed within the United Kingdom may not be sold during the times when they may not be taken, except that there is a short allowance at the beginning of the close time for clearing out stock. This does not apply to game and wild birds killed out of the United Kingdom, which may be sold at any time of the year. The proof that they were taken out of the United Kingdom lies on the person offering them for sale. The rule seems to apply to all British or Irish game sold during the close season, even to game kept in a cold store. The offence of killing game during close time is quite separate from the offence of selling game during close time ; and the latter can be committed, even if the game has been killed in the open season. In addition to taking or selling game in close time, it is an offence for any one, unless he has the right or permission, to kill game on the land, to take the eggs of any bird, of game, or of any swan, wild duck, teal, or widgeon, or to have such eggs in possession. The taking of the eggs of birds other than game or those birds named is regulated by the different County Councils, which make byelaws prohibiting the taking of certain eggs, and these byelaws seem to differ almost in each county. If there is no byelaw, all eggs except those mentioned above may be legally taken. [*See* WILD BIRDS PROTECTION.]

Where Game may be Taken—The general rule is that neither game nor any other bird or beast can be taken without the leave of the *occupier* of the land.

The law in 1831 vested the right of killing game and of sporting in him, and, unless he has parted with the right, no one can kill game, or sport over land without the occupier's leave ; if he has parted with it, the leave of the person who has acquired it must be obtained. The occupier usually parts with his right in two ways : he either gives it up to his landlord on taking the farm, which is the usual case when the game is reserved by the lease or agreement, or he lets it himself to some sporting tenant. Unless he has dealt with it in one or other of these two ways, it belongs to him. One part of sporting right the occupier cannot resign is the joint right, with the owner of the land, to kill ground game, hares, and rabbits. Whatever may be the reservation in the lease to the landlord, or in whatever terms the occupier has parted with his sporting rights to a tenant, the right to kill ground game remains in him, and he cannot divest himself of it.

Another restriction must be borne in mind. Unless the occupier either gives up to his landlord by some writing under seal, the right of sporting, or gives it to a tenant by some writing under seal, the right remains in the occupier. It is often forgotten that sporting rights of any nature can only be legally transferred by a document under seal. The neglect of this may cause great disappointment. A friend of the landlord goes shooting ; if there is no leave under seal, the tenant can stop him. A sporting tenant summons a poacher ; he fails to get a conviction, for he has no right to prosecute, there being no document under seal transferring the sporting right. Therefore, unless the occupier of lands has parted with the right of sporting by document under seal, he is the only person who can exercise such rights, or give leave to other persons to exercise such rights. In by far the larger number of cases the occupier has given up such right, either to his landlord or to some one else, but this has been by his own act. In law he is the owner and can deal with the right as he pleases.

There are certain exceptions to this rule, but they are of very rare occurrence, only being found in places to which formerly the Crown had granted special right. These places are Royal forests and chases and places where a right of free warren exists ; but the number of such places is exceedingly limited, and the right to game may as a rule be safely dealt with on the footing that it is the occupier's, unless he has parted with it.

Very important questions have arisen as to the occupier's right when he has parted with the game. How far is he entitled to compensation for damage done by the game ? If any special terms are made on his parting with it, either to the landlord or to the shooting tenant, those terms will regulate the bargain. It is a matter of contract like any other contract ; and the occupier, by giving up for value his right to the game, cannot complain of any damage the game may do to him, provided the game is that naturally produced on the land. But, if the person who has the game is not content with the head of game produced on the land, and brings on the place game and turns it down, then he becomes liable for the damage that is done. The rule is that if a person brings anything on land that does damage to his neighbour he is liable for the consequence of his act. This has been decided as to his game, but the point has not as yet arisen how far a person who breeds pheasants from bought eggs is liable ; it appears he would be, for there can be no real difference caused by the state in which the article causing the damage is brought on the land.

As to hares and rabbits, the occupier would have the right of killing them, and so of preventing any damage being done to him. But a neighbour would probably still be able to maintain an action for any damage caused by keeping an excessive quantity of ground game, the Act not having altered the law in this respect. The rights, therefore, of the occupier of land with his landlord and with the sporting tenant are now rights which are not so much regulated by Game Laws as by the special contract between the parties. If the landlord let the sporting which he has reserved, his tenant stands to the occupier of the land precisely in the landlord's place, and has the same rights as the landlord, neither more nor less ; if the occupier let the sporting, the sporting tenant has the rights he has contracted for, and no more.

As might be expected, there are numberless points on the question of letting sporting rights that continually arise, and will be found in any book on the Law of Landlord and Tenant, or the Game Laws, but the rule is as here stated ; the whole matter is a question of contract. Apart from the question of occupier, and persons deriving the rights from him, comes the next branch of the subject. Persons in pursuit of game without the permission of the occupier or holder of the sporting rights, trespass. In law, every one who has not the required permission authorising him to sport on each particular bit of land over which he goes is a trespasser, and is liable to be punished accordingly.

With the exception of the space between high and low water mark on the sea shore and on tidal navigable rivers, there is no place in the United Kingdom where every one can legally sport without permission. He must obtain permission from some one qualified to give it. It often happens that persons are allowed to sport in open or common lands, and are not interfered with, but still in law they are trespassers ; they have no legal right there as members of the public. They cannot even go along roads for sporting, as the soil of the roads is

supposed to belong to the owners of the adjoining land, or to some public body; and the public can only use it for the purpose of passing along, and for no other. Thus a man who shot a pheasant flying across a road was held liable to be convicted for unlawfully killing game, and a person who walked up and down a road for the purpose of obstructing a grouse drive was held liable in an action for damages.

So again, a person who walks along a road and sends a dog into the adjoining land to take the game would be liable. Indeed, it is almost impossible to put a case where one of the public can legally take game, except as above defined, unless he has permission. This restriction not only applies to game, but to all sporting, for any animal or bird, and is quite irrespective as to whether the person is or is not licensed.

While, on the one hand, a person who may have the legal right to kill game over half England cannot do it without a license, so, on the other, a person who is fully licensed cannot sport without the legal authority to go over some land.

As has been said, these rights are not pressed to the utmost extent, and so what is popularly known as "free shooting" exists in some places, but it has not any legal existence, and the person who is led to try it will probably find himself involved in a question of game trespass.

Apart from this class of case there are the cases of persons who deliberately break the law—poachers. Their offence is dealt with in different ways: (1) as to the time when it was done, day or night; (2) as to the number of persons who are engaged in it.

Trespassing in pursuit of game in the daytime is a matter which usually involves the trespassers in a summons before the justices in England, where the offence is dealt with summarily, and the trespasser finds his license, if he has one, forfeited, and, if he cannot pay the fine and has no goods on which a distress can be levied, he is liable to be imprisoned. If a trespasser refuse to give to the owner, occupier, or gamekeeper his real name and address, he may be arrested, but, if so, must be brought before a justice within twelve hours. If the trespass be committed by five or more persons, the penalty is higher. These offences apply to any trespass on any land in pursuit of game; but if the trespass is on a special place, such as a rabbit warren, or in a deer park in pursuit of deer, or in a decoy or place where wildfowl are specially kept, the offence becomes one under the Larceny Act as well as under the Game Laws. The person can be proceeded against under either at the option of the owner, but the penalties are much more serious under the Larceny Act.

If the trespass take place at night, it is of a much more serious character, the first offence being punishable with imprisonment with hard labour for three months; and, if any violence is used to owner, occupier, or keeper, it becomes an indictable misdemeanour, liable to be punished with seven years' penal servitude.

If there are more persons on the land at night to catch game, armed with offensive weapons, it becomes a still more serious offence, punishable with penal servitude up to fourteen years. It will be seen that the poaching offence may be an ordinary trespass on land by an individual in the day, punishable with a fine; trespass on particular places, punished more severely; trespass at night still more so; and if by armed gangs at night, subject to a very heavy penalty.

In order to detect offences on the land, certain powers of search and seizure are given to gamekeepers, but these can only be exercised on the master's land. This limitation of powers led to the passing of the Poaching Prevention Act, which gave to the police power to stop and search any person on a highway whom they reasonably suspected of being in possession of game unlawfully taken. So, if a person is caught on land with recently killed game, it can be seized by the owner or his keeper. If a person suspected of having game unlawfully taken is met on a highway, he can be stopped and searched by a policeman; and if game is found on him, it can be seized, but the keeper has no power off his master's land, and the constable has no power off the highway. The powers of each are strictly limited as to the place where they may be exercised. They also differ in this, that the keeper cannot search on suspicion, but must see game recently killed; the constable has a right to search any one whom he reasonably suspects. Such are the main provisions against trespass in pursuit of game, and for stopping poaching.

One point must be borne in mind: the offences are cumulative—*e.g.*, a person enters another man's land and kills a partridge and refuses to give his name; he is liable for the trespass and also for another penalty for refusing to give his name.

There are numberless cases on the points as to what constitutes a trespass, such as whether an actual entry on the land is required; will it do if you fire over a hedge? This has been held sufficient. What is being armed? What is recently killed game? When do the rights of the keeper cease, and when do the rights of the police to search begin? For these, however, reference must be made to some work on the Game Laws.

Besides the penalties under the Game Laws, if the person trespassing in pursuit of game has not got a proper license (*e.g.*, if he killed a partridge when he had only a gun license), or had no license at all, or if he used a gun without a license, he would be liable to the excise penalties. These are quite distinct and independent from the Game Laws, and can be only sued for by the inspector of excise, not by any one who desires; and a conviction under the Game Acts would be no answer to an information by the excise, nor would the justice be justified in taking the proceedings under the Game Act into account in fixing the penalty. The whole of the excise rules are a separate and distinct code and proceed on quite distinct lines from the Game Acts. Much of the arbitrary procedure that is said to belong to the Game Laws really belongs to the excise, persons not taking the trouble to distinguish between the two classes of cases.

There is, and always has been, a good deal of difficulty as to who is entitled to the property in game. Strictly speaking, no one has any property in it until it is captured, the right of the occupier of the land being merely a qualified right. He can prevent any one going after it or disturbing it while on his land, but he has no real property in it. That is, he has no such property as would justify him in charging a person illegally taking it with stealing it. The Game Laws do not touch this point, and, so far as they are concerned, there is no difference in law in this respect between game and any other wild animal. The rule is that, to obtain property in game, it must be reduced into possession. A series of decisions, some of them dating back to the Middle Ages, have introduced into the English law some very curious and complicated rules as to when game or any other wild animal becomes property; and the rules are of practical importance. The first is that when wild animals are started and killed on a man's land they become the property of the owner of the land. But if, started on the land of one man, they are killed on the land of another, they become the property, not of either owner, but of the taker. He is liable to be proceeded against for illegally killing the animal, but he is the owner of it when killed. There have been several important cases on the subject as to when the property in dead game rested in the owner of the land, and when it did not. If the property rest in the owner of the land the taking it is larceny, and a different state of law arises with regard to it than if it merely comes under the Game Laws. It is a felony, and the rules as to felony prevail, while any offence against the Game Laws, however aggravated, is at best but a misdemeanour. It should, however, be borne in mind that, because certain offences against game and wild animals are dealt with under the Larceny Act, that does not make the larceny a felony. That Act merely relates to the procedure for the punishment of the offence; for instance, under that Act, killing

rabbits in a warren is made highly penal, but it is not made larceny. This distinction as to when offences are merely offences against the Game Law and when they are offences against the general law, depending as it does on very refined and technical distinction, is one of the points that make it so difficult to state what the English law is on the subject.

Another point which has given rise to a good deal of discussion, and is not yet finally settled, is the question, what offence does a man commit, who, seeing a dead partridge or a dead pheasant or any dead bird in a field, goes into the field and picks it up? The general opinion is that it is larceny and a felony, and that the Game Laws have nothing to do with the case; but the point has not been expressly decided. The Game Laws only apply to the taking of live game. When it is dead, taking it from a field is in law the same as taking it from a shop. The rule that there is no property in wild animals until they are reduced into possession has the further limitation that it does not apply to game or other animals kept in confinement or semi-confinement. It has been decided that young partridges brought up by a hen can be stolen; the only question being when they cease to be property, and become so wild as to be outside the rule. In these days of artificial rearing and game farms, the point is one of some importance; the rule seems to be that the person who calls himself owner must be able to take them if and when he please; if he can do that they are his property, and the subject of larceny. The same question arises as to eggs. If the birds are reclaimed, or so far reclaimed that taking them would be larceny, then taking the eggs will be the same. If not, it is only the eggs of game birds that it is an offence to take or be in the possession of. The Game Act, 1831, provides that any one, without leave, taking or destroying the eggs of any game bird, or the eggs of any swan, wild duck, teal, or widgeon, or knowingly having them in possession, is liable to a penalty not exceeding five shillings for each egg. If, on the other hand, the eggs are the subject of larceny, the offence of taking them is punishable with penal servitude; and the receiving them, knowing them to have been stolen, is punishable with the same penalty. The eggs of other birds than game and those mentioned in the Game Act comes under the Wild Birds Acts, but the same rule applies to them; if taking the birds would be larceny, so will taking the eggs. But if the taking the bird is not larceny, the taking the eggs can only be punished under the Wild Birds Acts.

How Game may be Taken—Even the owner or occupier of the land on which the game is, however much he may be entitled to it, and whatever license he may have, can only take the game in certain ways. (1) He may not use poison to kill the game; this is expressly provided for in the Game Act, but it has been extended by subsequent Acts to forbidding poison to be used for killing any animals or birds, and so far as game is concerned it is now only a part of the general law. (2) Under the Ground Game Act the occupier may not use spring traps in the open for taking ground game. Before the Game Act, 1831, there were a number of instruments by which it was illegal to take game, and certain ways of taking game—*e.g.*, tracking it in the snow, were also unlawful; but by that Act all these restrictions have been abolished, and, except by poison or spring traps, owners and occupiers can take game by any mode they please. A distinction here will be noticed between Game Laws and other laws where licenses are required, such as the Fishing Laws. With game, it is the *person* who is licensed, and he can use any engine or device he likes. In fishing matters it is the *instrument* that is licensed, and the person can only use an instrument of that kind and no other. One other restriction should be noticed: the Game Act makes it illegal to take game on Sunday or Christmas Day. It has been decided that this applies not only to the case of a person who goes in pursuit of game on any of those days, but also to a person who sets a trap on Saturday and leaves it down on Sunday. If a snare is placed for a hare on a Saturday and left over Sunday, and a hare or rabbit is caught on a Sunday, the person who set the snare, even if in his own garden, is liable to a penalty, and this even if he has a full game license. It is also unlawful for a person who is duly licensed to kill game, and on his own land, where he has full right to the game, to use any firearms for killing game at night—*i.e.*, between the expiration of the first hour after sunset and the beginning of the last hour before sunrise. This restriction, however, only applies to game and hares, and does not appear to include rabbits. It certainly does not include wildfowl.

Sale of Game.—There are very severe restrictions placed upon the sale of game. Previous to the Game Act, 1831, the sale of game was absolutely illegal, but that Act made a great change in the law and allowed game to be sold subject to certain restrictions. The chief of these are:—(1) The only persons who can legally sell game are:—(*a*) the holders of a full license to kill game; (*b*) a keeper duly licensed, who sells his master's game which he has killed on his master's land, for and on account of his master, and (*c*) a person entitled to ground game, selling it under the Ground Game Act. This would only apply to hares, and it would seem that, to come within the exemption, the hare must have been killed on the land in the occupation of the vendor; if a person sold a hare killed on another man's land he would be liable to a penalty. Every one else, however legally they may have obtained the game, if they sell it, are liable to a penalty. (2) The only persons to whom game can legally be sold are persons who are licensed to deal in game. The license used to be granted by justices at special sessions to such persons as applied for it as in the opinion of the justices were fit persons to hold it, the Act forbidding license to deal in game to be granted to certain persons, such as the keepers of public houses. Now the licenses are granted by the District Councils of the place in which the applicant resides, but the same restrictions apply as before to the person to whom they are to be granted. Every dealer who is licensed to deal in game should exhibit over his shop a board, with "Licensed to deal in game" on it. It is only from these licensed dealers that the public can legally buy; if they buy from any one else, they render themselves liable to a penalty. This restriction only applies to game as defined in the Game Act, 1831. Any one can sell rabbits, wood pigeons, and plovers, and they can be bought from any one; but grouse, partridges, and pheasants can only be purchased from licensed dealers. This is perhaps the one part of the Game Laws which, if rigidly enforced, would bear hardly on the public, as the onus of showing that the game was legally bought rests on the person in whose possession it is found. There is an exception in favour of the keepers of hotels, restaurants, and such places supplying game to their guests; but, except this, the prohibition is absolute, and there is a case reported of the conviction of an enthusiastic naturalist who bought from a labourer an old partridge, which the labourer said he found dead.

The number of exceptions that exist to any rule on game make it dangerous to try to state a rule. The whole subject is very special, and it by no means follows that the law is what it would be expected to be. One point the Game Law brings out clearly—the equality of all the Queen's subjects before the law. The wealthiest landowner in England can no more legally carry a gun without a license over his own fields than can the worst poacher. Neither the landowner nor poacher can legally take a partridge or pheasant, unless he has a license. If a landowner breed his own pheasants, he cannot sell one without a license. If he has not a license, and finds on his own ground a wounded partridge, he cannot catch it without incurring a penalty. It is not the landless man who alone feels the force of the Game Laws. They touch peer and peasant alike, and teach that it is not lawful for a man to do what he likes with his own, that he can only deal with this class of property subject to the restriction of the laws.

WILLIS BUND.

Game Defined—The Act 1 & 2 Will. IV. c. 32 is the principal Game Act now in force, but has been amended and supplemented by several Statutes passed during the present reign.

By this Act (sect. 2) "game" is defined to include "hares, pheasants, partridges, grouse, heath, or moor game, black game, and bustards." This definition has been slightly varied by other Acts (*e.g.*, the Night Poaching Act, 9 Geo. IV. c. 69, and the Act authorising constables to search suspected persons, 25 & 26 Vict. c. 114), while by the Game Licenses Act (23 & 24 Vict. c. 90) woodcocks, snipes, quails, landrails, conies, and deer, although not regarded as game strictly speaking, cannot be killed without a license. Nor can any of the birds named be killed during the breeding season or close time, which varies in England, Scotland, and Ireland.

The close time fixed for game birds is as follows:—for partridges from February 1 to September 1; pheasants, February 1 to October 1; black game, December 10 to August 20; grouse, December 10 to August 12; bustard, March 1 to September 1; and the possession of such game after ten days by dealers, and forty days by others, after the expiration of the season, is illegal.

By a recent decision of the Court of Queen's Bench, however, it has been held, on appeal in the case of *Guyer* v. *The Queen*, that this does not apply to game killed and received from abroad. (See report of this case in *The Field*, April 20, 1889.)

Close Time for Birds not Game—With regard to birds not included in the definition of "game," *sea birds* were in 1869 protected from April 1 to August 1 by 32 & 33 Vict. c. 17, and *wild fowl* between February 15 and August 1 by 39 & 40 Vict. c. 39 (1872). Now *all birds* are protected between March 1 and August 1 by the "Wild Birds Protection Acts," 1880–81 (43 & 44 Vict. c. 35, and 44 & 45 Vict. c. 51), under different penalties, according as the species of bird in question is included in the Schedule to the Act or not.

If the bird in question is *included in the Schedule* to the Act it may not be killed during the close time under a penalty not exceeding £1; if *not included* in the Schedule the penalty is, for a first offence, a reprimand and payment of costs, and for every subsequent offence a fine not exceeding 5*s.* in addition to costs. But any one may kill birds which are *not* in the Schedule to this Act *on his own land* during the close season, and authorise other persons to do so without incurring any penalty.

In 1894 a further Act was passed (57 & 58 Vict. c. 24), enabling a Secretary of State, upon application of a County Council, to prohibit by order the taking of eggs of any wild bird, either throughout the county or in certain specified areas within it, or the eggs of particular species, to be named in the order. Since the passing of this Act a number of orders have been made under its provisions, with the result that considerable confusion has been created by the variation in the provisions for different counties.

Ground Game—Hares and rabbits may be killed at any season of the year; but hares may not be killed on a Sunday, nor on Christmas Day, being game within the definition given in 3 & 4 Will. IV. c. 32.

Under the Ground Game Act (43 & 44 Vict. c. 47), every *occupier* of land has the right (of which he cannot divest himself) to take or kill hares and rabbits concurrently with the *owner* of the land, or his lessee of the shooting, certain provisions being made as to who may shoot on behalf of the occupier and as to the use of traps, no license to kill "ground game" being required under this Act.

The owner or occupier of land having the right to the game thereon may (except at night[1]) kill hares, or authorise another to do so, without taking out an excise license to kill game; and so may persons hunting or coursing. This privilege is given in England by 11 & 12 Vict. c. 29, and in Scotland by 11 & 12 Vict. c. 30. Ireland has no corresponding Act.

[1] The killing of game or rabbits by night is prohibited by 11 & 12 Vict. c. 29, sect. 5.

There is no close time for hares, that is to say, no period of the year in which they may not be *killed*; but by the provisions of the "Hares Preservation Act, 1872," it is illegal to *sell* a hare or expose one for sale during the months of March, April, May, June, and July.

Deer—Deer may not be killed in an *unenclosed* forest or chase under a penalty not exceeding £50 for a first offence, and imprisonment for a second; or in *enclosed* ground, or park, upon pain of imprisonment with or without hard labour, for a term not exceeding two years, under 24 & 25 Vict. c. 96; and a deer stealer in the commission of the offence may be arrested without warrant.

Since the passing of the Act 23 & 24 Vict. c. 90, an excise license is required for killing a deer as if it were game, except when pursued with hounds, or killed in a park, or other enclosure, by the owner or his agents. In Ireland there is a close season for deer under 10 Will. III. c. 8. But if a deer which has wandered from the forest, or escaped from a park, should take up its abode in another man's coverts, doing damage there, it may be killed by the owner of the covert, or his keeper or agent.

J. E. Harting.

GAUR (*Bos gaurus*)—The Gaur, or Bison, as it is usually called by Indian sportsmen, ranges over Assam, Central Provinces, Mysore, and Travancore and the forests of Madras, &c.

My own experience of hunting this animal was confined to the forests of Mysore in 1892 and 1893, and in 1894 in the Central Provinces. The following remarks must be understood to apply exclusively to Mysore, as it was there that I had experience of tracking the gaur.

In several of the forests of Mysore, Keddah operations for the capture of wild elephants are established, and here I found the gaur pretty generally distributed. Being of a shy nature, he shuns civilisation, and roams through these vast forests.

The main advantage of this country consists in the fact that there exists a race of natives, Sholigas, Kurambas and others, who are many of them professional trackers, and, being brought up in these forests to forage for themselves, the art of tracking is second nature to them. Their powers in this respect appeared to me miraculous; they might often be compelled to give up a track in consequence of the beast getting too good a start, but I cannot recall an instance in which they ever lost it.

Very early rising is essential to this sport. The gaur, like others of the genus, wanders about during the night and early morning in search of food and water, lying quiet during the heat of the day under the shade of the jungles.

To be successful, it is therefore necessary that the sportsman should find a perfectly fresh track, almost as soon as it is light, for as the sun rises and the day advances, the quarry retires into the densest part of the jungle and lies down. Here, on account of the great difficulty of approaching without noise, it is impossible to get a shot. The reward of a long track may probably consist in hearing his snort of alarm and thundering rush as he dashes off.

The part of the gaur usually first seen is his head, but this is generally an uncertain chance, as (especially when alarmed) he carries it with his nose in the air, making it very difficult to hit the centre of the forehead. The most deadly spots are either the neck or behind the shoulder.

The best time of year for gaur tracking in the Mysore forests is in the early May rains, before the jungle is too thick and high. The ground is then softened by the wet, and tracking is easy. In the province of Mysore, the rainfall is earlier than in other of the more northern parts of India, and I remember that in the months of August and September, I was much handicapped by the dense growth consequent on early rains. The writer can recall being, in the month of August, within ten yards of a solitary gaur and being unable to see him, the animal making off. When tracking gaur, on their becoming alarmed and decamping, it is a good plan not to follow up too quickly, but give them time, and they will sometimes pull up after going a short distance.

A herd varies in number from about ten and upwards, the most I saw together being about fifteen. The solitary bull is usually considered to carry the best trophy. But I am inclined to think this not invariably true, although unquestionably the finest head in my possession is that of a solitary bull.

Sometimes a solitary gaur has his horns much chipped at the end, spoiling the grand curve which make the head so fine a trophy.

The weapons I used for the gaur were a ten-bore rifle and a twelve-bore rifle, firing respectively eight and seven drams of powder and hardened spherical balls.

The question often arises as to whether gaur shooting is a dangerous sport. The animal is usually harmless until wounded, and then he must be followed up with great caution, especially as he has a habit at times of turning back on his tracks and waiting for his pursuer. When charging, he carries his head bent down between his fore-legs.

In August, 1892, I was tracking a solitary bull, and coming suddenly on him, as he presented a head shot, I fired at it. The shot, as I afterwards found, was not in the centre of the forehead. The gaur immediately, with head between his fore-legs, charged straight for me. He missed his point, and passing at about ten yards, received another in the shoulder which finished him.

In July, 1893, the writer and a friend happened

GAUR.

Av. ht. at shoulder, 5 *ft.* 9 *in. Av. horn meas.*, 2 *ft.* 7 *in.*; *Max. horn meas.*, 3 *ft.* 3 *in*

to be out together with only one tracker, the other being away. My friend fired at, and wounded, a gaur. Having hit off the tracks, we, accompanied by the shikari, followed it up. The tracks finally led into some dense bamboo jungle. It was so thick in places, that we had at times almost to crawl. We advanced cautiously, knowing it was not far ahead. Suddenly we heard it jump up, and in an instant the animal was on us. My friend had just time to fire from his hip, and the shot took effect in the gaur's head and dropped it. He was knocked down, but was not hurt, wonderful as it may seem.

A wounded gaur has wonderful vitality, and will at times travel considerable distances without lying down.

The writer can recall wounding a herd bull through the body, and following it for nearly four hours before he again came up with it and despatched it. I remember the advice given to me by a well-known sportsman in Mysore as follows. When a gaur has been wounded, do not follow him up at once, but sit down and wait: then in half an hour or more start on his tracks.

A. F. Mackenzie.

GAYAL (*Bos frontalis*)—These wild kine are plentiful in parts of the Chittagong hilly districts, and extend into the interior to Munipore; a few exist in the northern and eastern parts of Assam, and probably extend to the north and east to the confines of China. They are numerous along the spurs of the Bhootan Hills, amongst the Dufflas, in Tipperah, amongst the Looshais, and are kept in herds, in a half-wild state, by the wild tribes which skirt Chittagong. They are domesticated extensively and easily. Very many of the young wild cattle are caught in nets and are soon tamed. The people scatter near their villages huge lumps of rock salt, which have an extraordinary fascination for the gayal. The herds are allowed to graze during the day in the adjoining forests, but are recalled towards dusk by the tinkling of bells or the striking of gongs.

The forehead of the gayal is not concave like a gaur's. It is quite straight and destitute of the semi-cylindrical crest. The horns grow straight out and then curve very slightly upwards, and now and then, in a very old bull, they are sometimes slightly truncated. The forehead is broad and, like a gaur's, covered with lightish coloured hair. It browses more than Bos gaurus, and has a small but distinct dewlap. The dorsal ridge is prominent, but not to the same extent as in the larger animal, though, at a distance in a forest, one might easily be mistaken for the other. Indeed, the Assamese called both the gaur and gayal "the Mithun," but, if pressed, say the former is the Asseel Mithun and the latter a Mithun only. Thus when that noted sportsman, Mr. Sanderson, shot a gaur on the confines of Assam, and heard it called by the aborigines a "Mithun," he jumped to the conclusion that the gayal does not exist in a feral state, but he is totally mistaken. These two wild cattle are, I believe, cousins many times removed. Not far from the confines of Arrakan Father Barbe found the gaur, gayal, and tsine; and I have heard Mahouts say that they had seen gayal not very far from the Wild Yak. Hybrids between the gayal and the humped cattle of India are common. Many have become feral, and are to be found near the Manass river in Baghdooar. I have seen them dead of the murrain, from which portions of Assam are never free. I have only shot two, and those were in the hills between Nowgong and Tipperah, but I have seen them several times elsewhere.

W. Pollok,

GAZELLES—It has been shown in the article on Antelopes that the gazelles are widely distributed in Asia and Africa. Although some few of these animals, such as the so-called Ravine deer (*Gazella bennetti*), and the Thibetan Ravine deer (*Gazella picticaudata*), are, as their names imply, chiefly found in deep bushy valleys, among rocky hills and scrub, the great bulk of the gazelles are to be sought upon open plains, often far removed from water. Two north African forms, however, the Atlas gazelle and Loder's gazelle, are found well up among rocky hills. From the open character of their habitat, and the extremely wary and suspicious nature of the animals themselves, few game animals afford finer or more difficult stalking than the gazelles of the African and Asiatic plains. Successfully to accomplish the downfall of these fleet and most suspicious creatures, favoured as they usually are by the often hopelessly bare and open nature of the ground upon which they feed, the sportsman must be possessed of infinite patience, energy, and endurance. He must also be a good rifle shot, and employ the best and most accurate long-range weapon that modern science can offer to him. The heat and mirage of the hot plains form, after the early hours of the morning, another factor which tends to impede the gunner and to favour the gazelle. The novice at first often finds it very hard to overcome the difficulty of judging distances upon heated plains, and even practised gunners occasionally expend a large number of cartridges in proportion to the number of animals brought to bag. Undoubtedly, for all kinds of shooting, the very early hours of the morning are the best. The atmosphere is clear and refreshing, the game is usually at this time to be found quietly feeding, and the mirage has not yet made its appearance. On the other hand, such is the clearness

Drawn by W. G. Wallis

Gazelle Stalking

GIRAFFE (*Camelopardalis giraffa*), *Tūtla* of the Bechuanas, *Ntūtla* of the Matabele, *Nghabi* of the Masarwa Bushmen, *Kameel* (camel) of the Boers. This, the tallest of all animals, is now found only in the Continent of Africa, although fossil discoveries show that giraffe-like creatures roamed freely in the past in Southern Europe, Persia, and even as far East as the Siwalik Hills in Northern India, and in China.

From the days of Imperial Rome the giraffe was practically unknown to Europe until four hundred years back, when a single giraffe was shown at Florence by Lorenzo de Medici. After that period the giraffe again disappeared completely from the purview of Europeans, until towards the close of the last century, when it was re-discovered by Colonel Gordon, an officer in the Dutch service at the Cape, and by Lieutenant Paterson, an English officer. These gentlemen found and shot a specimen just north of the Orange River, then lately discovered. The skin of this animal was sent to the Leyden Museum. About 1835 four young giraffes, captured in North Africa, were acquired by the Zoological Society and exhibited in Regent's Park. These animals bred in confinement; and giraffes have since been familiar to the public for many years. Only one specimen of the giraffe, a female—an excellent example captured wild in South Africa some two years since—now remains to be seen alive in Great Britain, and as these animals grow rapidly scarce in Africa, and are year by year more difficult of capture, it is not likely that Europeans will for very long be able to enjoy the sight of these extraordinary mammals.

The giraffe forms a distinct family of its own (*Giraffidæ*), and, although provided with short horn-like processes, differs materially from all horned mammals. These false horns, which are covered with hair and tufted at the apex, are at first quite separate from the bones of the head. Later in life they become united with the skull. Rütimeyer has very well described the giraffe as "a most fantastic form of deer," which is perhaps as good a description as any one can invent for this animal. The giraffe owes its immense height mainly to the extreme length of its neck and limbs. A full-grown male will measure 19 feet from the hoofs to the horn tips. The writer measured very carefully an old bull giraffe, killed by his shooting companion, Mr. W. Dove, in the North Kalahari in 1890, which was but a bare quarter of an inch short of 19 feet. Full-grown females stand from 16 to 17 feet in height. A large cow shot by the writer during the same expedition, measured just over 16½ feet. The eyes of the giraffe, shaded by long lashes, are large, soft, melting, and extremely beautiful. The senses of smell and vision are extraordinarily acute, and the giraffe is an extremely shy and suspicious animal, hard to find and easily disturbed. As the animal attains maturity a curious osseous prominence in the middle of the forehead, between the eyes, is developed. The tongue is very long—some eighteen inches—slender and extremely flexible and prehensile. It is used for plucking down the leaves and branches of the acacia trees, on which these animals feed. The nostrils are long and slit-like, and, by a

GIRAFFE.

curious arrangement of the sphincter muscles, can be opened and closed tightly at will. I have little doubt that this arrangement is merely a provision against the sharp-pointed acacia thorns, amid which the giraffe gathers its food. For exactly the same reason, as I conceive, the prolonged and very prehensile upper lip, and the lower lip and chin, are provided with a thick, velvety, protective coating of hair.

The colour of the giraffe varies greatly, from lemon-fawn to orange-tawny and dark chestnut. The old bulls and even old cows grow very dark—almost black—upon the back and upper

parts. The patches of darker colouring are laid upon a ground of very pale fawn or cream. The lower parts and the insides of the legs are white. The hoofs are large—nearly a foot long in the old males—elongated and somewhat cow-like. There are no traces of false hoofs. In North-east Africa—Somaliland—Major Wood, an English officer, has discovered and shot within the last few years a new variety of giraffe, never before seen. In this variety the dark colouring is only separated by very fine lines of the paler hue, and at a short distance the animal would therefore appear as entirely of one dark colour. In the ordinary giraffe the blotches or mottling can be distinguished at a long distance. It is worthy of note that in the wild state giraffes are of much richer colouring than when kept in confinement. The skin of this animal is tough and extremely thick —nearly an inch upon the back in mature males—and has always been in great demand in South Africa for making sjamboks, or Colonial whips. The value of a skin varies from £2 10*s.* to £4 10*s.* or £5, and for this reward, unfortunately, very large numbers of giraffes are annually slain by native and Boer hunters.

In South Africa the giraffe is invariably hunted on horseback, a form of sport which has always had great attractions for English sportsmen. There is nothing finer in nature than the sight of a troop of giraffes in full flight, and the excitement of the find and the run up is intense. In its slower paces, the giraffe, with its curious gliding walk, is extremely deceptive. It is in reality travelling at a rapid rate. When thoroughly roused, these animals are capable of putting first-rate hunting horses to their utmost speed. It is well to remember that unless the hunter plies sjambok and spur, and rides his very hardest at the flying troop in the first two miles of chase, he may lose them altogether. At a steady, slinging gallop, giraffes will travel for hours and wear out a horse, but, if chased very hard and forced beyond their pace early in the run, the hunter will be enabled to ride close up to the particular beast he may single out, and put in his shots from the saddle. Some hunters prefer to get up within a hundred yards, jump off and fire. In the opinion of the writer and of many experienced African sportsmen, it is better to push one's horse close up to the stern of the giraffe, and, within a few yards, fire from the saddle. A good South African hunting pony needs little guiding in a run of this description, and the rider can drop his reins and safely use both hands. The best point to aim at, whether on foot or on horseback, is the root of the tail. The giraffe's body is very short, and a well-planted solid bullet travels right into the vitals of the animal and speedily brings it down. A broken limb will also effectually bring down a giraffe.

As the giraffe is possessed of a very thick skin, solid, and not hollow, bullets should invariably be used. The writer and his hunting companion used cartridges containing solid Martini-Henry lead bullets, and found them most efficacious. These cartridges (ordinary Government ammunition, which can be procured everywhere up-country in South Africa) were used in double Afrikander rifles, which are made specially for this ammunition (·450–·577), and are extremely useful weapons for this form of shooting. A single Martini-Henry sporting rifle, or a single or double ·450, ·500, or ·577 rifle would, however, be just as serviceable, provided solid bullets are used.

The giraffe is in South Africa nowadays seldom surprised in open country. Its chosen haunts are the open giraffe-acacia forests, or dense thorny jungles, in either of which the mounted man is a good deal handicapped. If the troop—usually from seven to a dozen, though the writer has encountered nineteen together—can be forced into a piece of open ground, the work is comparatively easy. If hunting in bush and forest, the sportsman may be well advised, despite the heat, to put on a strong cord coat, as the giraffe usually makes for the thickest part of the bush, through which it plunges, dodges, and ducks in a perfectly astonishing manner, quite regardless, thanks to its thick hide, of the terrible thorns which rip and tear the horse and rider. In East Africa, where these animals are usually stalked on foot, they are occasionally found in open country. In the North Kalahari region, where the best South African hunting grounds now lie, Masarwa Bushmen, perhaps the finest trackers in the world, are usually employed as spoorers. These people, whose services can be secured for a mere trifle, are intimately acquainted with the haunts and habits of this gigantic game.

For hunting in desert country—*e.g.*, the Kalahari—water-carts (barrels mounted on wheels) should be taken; the hunter has frequently to cut himself off from his wagons and water supply for two or three days at a time, when in pursuit of these animals.

The flesh of young giraffes, and especially of fat cows, is excellent. The old bulls are rank, and uneatable by Europeans. The immense marrow bones, roasted over the camp fire and sawn in half, are one of the greatest luxuries of the hunting veldt. The giraffe is voiceless and practically without means of defence, but, when run to a standstill, it will strike out dangerously with its fore-feet. At the present day the giraffe may be found in the North Kalahari, Khama's western and northern country, Ngamiland, Ovampoland, behind Benguella, in Portuguese South-west Africa, in Mashonaland, occasionally in Matabeleland, and in Portuguese South-east Africa. Thence northward, through Nyassaland, to German and British East Africa,

the Soudan and Somaliland, it is to be found in localities suited to its habits. It is, curiously enough, extremely doubtful whether this animal ever ranged south of the Orange River. It seems to be unknown in West Africa, north of the Congo.

H. A. Bryden.

GNU—BRINDLED (*Connochætes taurinus*)—The **Blaauw Wildebeest** of the Boers, the blue wildebeest of British hunters, *Kokoon* of the Bechuanas, *Inkone-Kone* of the Matabele and Zulus, is, like its grotesque congener the white-tailed gnu, an antelope peculiar to the African continent. In the days when game was plentiful all over South Africa, the blue wildebeest was occasionally found in Cape Colony, just south of the Orange River. Northward it has a very wide distribution, being found in South Central Africa, and thence as far north as British East Africa, where a white-throated variety (*Connochætes taurinus albojubatus*), the *Nyumbo* of the Swahilis, has in recent years been plentifully discovered. The Brindled Gnu stands about four feet four inches at the shoulder. The body colouring is a dirty drab or dun, strongly marked on the fore part of the body and neck with the dark stripes or brindles from which it takes its name. The head is heavy and buffalo-like, and is covered upon the front and chin with thick, shaggy black hair. The long, upstanding, black mane, extending to the withers, and a quantity of black hair upon the dewlap and breast, add to the heavy-fronted, wild and cumbrous aspect of this antelope. The legs are slender and beautifully shaped. The tail is black and flowing, resembling that of a pony. The eyes are set very high in the head. The horns, which are somewhat buffalo-like in shape, are formidable, and a wounded blue wildebeest should be approached with caution. The flesh is poor and unpalatable, and, except as food for native servants or to supply trophies, there is no reason why the blue wildebeest should be remorselessly pursued and shot. These antelopes are gregarious, and run in troops numbering from a dozen to fifty. In the African winter season the bulls are frequently found ranging in herds apart from the cows and calves. I have encountered a troop of between thirty and forty, all of which were bulls, mostly full-grown. These wildebeests are found sometimes upon open plains, at others in thinly bushed country, and the more they are persecuted the more inclined they seem to seek the sanctuary of the bush. In South Africa they are always pursued on horseback. They are among the fleetest and most enduring of all game animals. and in a stern chase will often run clean away from a good African hunting pony. They can be turned, however, in full career by planting a bullet so as to strike up the dust in front of them ; or, if the hunter can so manœuvre as to place himself between the bush and the plain upon which they feed, he can often render them utterly bewildered, and, jumping off his horse, can thus obtain easy shots. They are extremely tenacious of life, and with a bullet through the body, or a broken leg, will yet occasionally make good their escape. The blue wildebeest exhibits nothing like the antics of the white-tailed Gnu, but when first startled by the hunter, the herd usually execute a few kicks and flourishes and then, whisking their long black tails, speed across the plains or through

Brindled Gnu or Blue Wildebeest.

Av. height at shoulder, 52 in. Av. horn meas., 24 in. ; Max. horn meas., 31¼ in.

the bush at what looks like a lumbering gallop, but is in reality a very fast pace. They are still fairly abundant in Khama's country, Ngamiland, Ovampoland, Matabeleland, and Mashonaland. In Portuguese South-east, and South-west Africa, and in parts of Central and Eastern Africa they range in very large numbers.

H. A. Bryden.

GNU—WHITE-TAILED (*Connochætes gnu*)—This, the **Zwart Wildebeest** of the Cape Boers, is best known in South Africa as the Black Wildebeest. The name Gnu or Gnoo is derived from the ancient Hottentot designation for this animal. Although a true antelope, the white-tailed gnu is one of the most strange and grotesque of nature's creations. Even among the myriads of wild animals to be found in Africa, it has always been remarkable. The head, stripped of the wild mane and shaggy hair with which it is adorned, is extremely ox-like ; viewed at a short distance the muscular quarters are not unlike those of a pony. The legs are beautifully slender, terminating in neat hoofs. The tail is long, whitish, and flowing. The general colour of this gnu is dark brown. A full grown bull stands about 4 feet at the shoulder. The head, which is heavy and disproportioned to the size of the animal, is decked with

bristling tufts of dark hair above the broad flat muzzle and under the eyes. The same shaggy hair is to be found under the throat, and upon the chest and part of the belly. On the upper lip, and surrounding the wild eyes, are long white bristles. A thick and full hog-mane of a lightish colour stands erect from the strong arched neck. The horns extend downward over the eyes, and then suddenly turn upwards in a sharp, formidable hook. The white-tailed gnu is a dangerous beast when wounded, and in captivity is extremely savage and treacherous.

This gnu is exceedingly fleet and active, and of a most suspicious nature. Yet, despite these qualities, the skin-hunting Boers of the Cape Colony, Griqualand West, and the Orange Free State have within these last thirty years almost succeeded in achieving its extermination. Forty or fifty years ago it thronged the plains of these territories—beyond which it was seldom or never to be found—in incredible numbers. Even thirty years ago or less, the Black Wildebeest was still distributed in large numbers in the Orange Free State. At the present day it is only to be found upon a few farms in the Free State, where it is preserved by Dutch pastoralists. A single small troop still existed on a farm near Victoria West, Cape Colony, a few years back. It is certain that the number of these grotesque and unique antelopes now left to South Africa is well below a thousand. And, unless the Boers now preserving the few remaining herds can succeed in perpetuating the species, the animal will, not long hence, be as extinct as the true Quagga. The white-tailed gnu is one of the most restless of all animals. Upon the approach of hunters or any strange object the herds exhibit the most astonishing pranks and oddities, wheeling, plunging, and fighting in every conceivable attitude, and then suddenly, with a fantastic kick of the heels, scouring across the plains with white tails streaming in the wind. Mr. J. G. Millais, in *A Breath from the Veldt* (H. Sotheran, 1895), gives the most recent and detailed account of these strange antelopes. They breed well in captivity, and are to be found in European Collections.

H. A. Bryden.

GOA (*Procapra picticaudata*) or **Tibetan Gazelle** — Stands between 22 inches and 24 inches on delicately formed limbs. Its general colour is a very pale kind of drab, tinged slightly with brown. A pure white disc bordered with brown surrounds a short brown tail. In most full-grown bucks there is a patch of longish white hair on the forehead between the large, lustrous eyes. Unlike almost all other Tibetan animals, including the dogs, the goa seems to have none of the soft, fine under-fur known as "Pushum." At any rate, the writer found not a vestige of it amongst the sleek hair of any specimens he shot. But its coat is said to grow longer in winter.

The buck's horns are black, and usually about a foot in length, though in extra fine specimens they may be an inch or two longer. They are closely annulated to within about two inches of their tips, which turn slightly upward, and as the horns spring up from the skull in a rather forward direction, and then curve much backward, they give the beautifully shaped little head a most jaunty appearance.

The doe almost exactly resembles the buck, but has no horns.

The goa is keen-sighted and wary, though, in the latter respect, perhaps less so than any other game animal of Tibet. It never herds in large numbers, two or more being usually found together, and a solitary animal is not infrequently met with.

Its habitat is on the bare, undulating and broken uplands extending all along, and far beyond, the base of the Himalayas on the Tibetan side, whilst certain localities there are more frequented by it than others. It is seldom, if ever, found at a lower altitude than about 14,000 feet, but often very much higher; consequently all the Himalayan approaches to goa land are, during winter, impracticable.

The howling blast of wind which comes sweeping almost incessantly over those bare Tibetan steppes often makes aiming there at so small a mark anything but steady. But as this characteristic wind of the country occasionally lulls for a few hours in the morning, that time of day, if windless, is the best for goa shooting. Few Tibetan sportsmen, however, hunt specially for goa, but take their chance, when searching for larger game, of coming across its more favoured haunts.

A double express rifle of ·450 bore is as suitable as any weapon for goa, because it is also quite capable of bringing down every other kind of Tibetan game animal, not excepting even the wild Yak.

Two things should always be borne in mind when aiming with the rifle on those high wastes, namely, that the strong gusty wind causes more or less deflection of the projectile, and that the very rarefied air at such high altitudes offers but little resistance to it, thereby lowering its trajectory. A powerful telescope with large field is an absolute necessity, for the goa so much resembles the colour of the ground it affects that often, if far out and stationary, its small form is almost indistinguishable from the stones around it, especially if the day be sunless. Cloudy or windless days are, however, exceptional in those high arid regions, where the sun, from the moment it tops the horizon, is scorching. The writer found a kind of mask of soft thin cloth, extending down over the nose, with apertures for the eyes, almost indispensable for alleviating the distressing effects of the broiling

sun, combined with the piercing cold wind on his face. When traversing long tracts of glaring snow or ice on high Tibetan or Himalayan passes, a pair of green "goggles" may be added to the above as a precaution against snow-blindness.

DONALD MACINTYRE.

GOAT—NILGIRI (*Hemitragus hylocrius*)—This animal, better known in India by the name of Nilgiri Ibex, is the only goat found south of the North Temperate Zone, with the exception of an ibex on the higher mountains of Abyssinia. It is restricted to the south of India from the Nilgiris and Anamallays to Cape Comorin. It resembles the Tahr (*Hemitragus jemlaicus*) in some respects, but has short hair instead of the long coat, and its colour is different. The old males are nearly black, with a white space behind the shoulder, which gives them the name of saddlebacks. The horns are three-sided, fourteen inches long by eight in girth. It is considered a great prize for a sportsman to get an old saddleback, as they are hard to find and, when found, very difficult to stalk.

It still exists in the Nilgiris, where it was found in great numbers forty years ago. Now it is only found in those parts of Southern India that are difficult of access, and where the mountains are surrounded with dense malarious forests. The first I saw were on a low grassy hill, with very precipitous sides, that stood alone in a dense forest in the lower Anamallays, and it seemed strange for a goat to inhabit such a hot tropical region. Their favourite ground is the open grassy highlands adjoining the stupendous precipices that surround most of the mountains of Southern India. They are usually in herds of four or five up to sixty, and are very wary and sharpsighted. The old males, after feeding, retire into very safe hiding and inaccessible places, and are far less often met with than the herds. When looking for ibex, I once came unexpectedly upon a splendid tusker elephant, another day upon a solitary old bull bison, and twice happened upon black panthers, which shows the wild and sporting country into which the sportsman is led when in chase of the ibex. The best account of the country it occupies and adventures in its pursuit is to be found in *Records of Sport in Southern India*, by that grand sportsman and good naturalist, the late General Douglas Hamilton.

P. W. L'ESTRANGE.

GOAT — ROCKY MOUNTAIN, OR WHITE (A) (*Haploceros montanus*)—The white goat is not a goat at all, but a very peculiar mountain antelope, its nearest relatives being certain of the Himalayan antelopes. The fact that we call our only antelope a goat may, I suppose, be taken as an offset to the other fact that the prongbuck, which is universally called antelope by American hunters, is not one at all, standing among ruminants in a position as unique as that of the giraffe.

The white goat has certain peculiarities which mark it off from all other mountain game. It occasionally sits up on its haunches like a dog to look at something which strikes it as suspicious. It is extraordinarily tame or stupid, showing a bold self-confidence which no other animal of its size displays. Moreover, though it dwells by choice among appalling precipices, and is a marvellous climber, it utterly lacks the bounding agility, not only of the chamois, but even of such heavy beasts as the mountain sheep. It generally climbs with a sort of sturdy deliberation, and often lifts itself on a ledge by spreading its elbows apart and drawing the body up much as a man would. It is singularly intolerant of heat, and even on rather cold days will retire to a cave, with the temperature freezing, in order to get out of the sunlight.

There is a muskpod between the horn and ear which makes the flesh of all but young animals uneatable. The needle-pointed horns are from eight to ten inches long, and so do not offer much of a trophy. The pure white robe, which is very thick, long and woolly in winter, and which contrasts so vividly with the black hoofs, horns and muzzle, has some commercial value, but at present not very much. In consequence the beast is not much followed by the professional hunters, who can find more valuable game in less inaccessible places; for the chief protection of the white goat is the extraordinary roughness of its haunts.

Sportsmen have, within the last dozen years, begun to follow the white goat quite eagerly; but game is really never thinned out by true sportsmen, and the queer, musky self-confident beasts offer a striking contrast to other American game in the fact that they have hitherto decreased very little in numbers.

There is no game animal in America the pursuit of which entails such severe toil. In places where the mountains run down into little-frequented fiords, or great lonely lakes, it is possible to go right into the haunts of the white goat by canoe, and occasionally to surprise one near the water; but ordinarily the animals are to be found only after heart-breaking climbing. To get into the region where they are found it is sometimes possible to take a packtrain, and at other times a canoe. Often, however, the journey must be performed on foot from the beginning; and this is almost always the case when the edges of the hunting grounds themselves are reached, and it is desired to camp within reasonable distance of the range of the game. Only the barest necessities can be carried on a man's back. In my own experience I have usually gone after white goats with but one companion, some old mountaineer who

knew the ranges; though in one instance I also took an Indian with me. The wooded lower slopes of the mountains throughout most of the white goats' range are so broken, and covered with such a tangled mass of forest and undergrowth, that the walking is difficult beyond belief. Every step is severe exertion. A walk is one perpetual scramble over fallen timber, through deep gullies, across boulder-strewn points up sheer cliff walls, through masses of twisted bushes, over windfalls where the down timber, amid the wildest confusion, lies sometimes thirty feet from the ground, with young spruce growing thickly between the logs—an added touch of discomfort being given where the country is burnt. After an hour's scramble over country like this a man will be so drenched with sweat that he will look as if he had fallen into water. His fare is of course but meagre, unless he can manage to shoot something, and this is very difficult in such a forest, because it is out of the question not to make a noise.

Camp is usually made in some glade by a stream, as near the upper edge of the timber as possible, for ordinarily the goats are found far above timber land. They can best be hunted in the evening and morning, although they feed at intervals all through the day. The start has to be made very early, because there is sure to be several hours' climbing before one finds the animal. They are by no means difficult to see, their white bodies being very conspicuous, and once seen the stalk itself is comparatively easy. All that is necessary is to get above them, for they seem to suspect danger only from below, and if surprised will almost always run up-hill. They are bold, pugnacious and stupid, and are so accustomed to the noise of falling rocks that they are not readily alarmed by a slip or a misstep on the part of the hunter. In consequence, there is little need to display the hunting craft absolutely necessary in the chase of the big horn, the moose and the wapiti. The qualities called for in the hunter are ability to endure the prolonged and extreme fatigue of climbing among the stupendous rock walls where the goat antelope dwells, and the nerve to cross the occasional bits of dangerous ground encountered. In other words, the demand is made upon the qualities called for in mountaineering rather than in ordinary hunting. Nevertheless, as the test of the highest sport is the display of manliness and hardihood, the chase of the white goat deserves fair rank; for the white goat hunter must be hardy and persevering, and must have a good head, good lungs, and good muscles.

THEODORE ROOSEVELT.

GOAT—ROCKY MOUNTAIN (B) (*Haploceros montanus*)—Some indefinite mention of the Rocky Mountain Goat is to be found in the narratives of the early Spanish explorers in California, but the first reliable information on the subject occurs in the account of Lewis and Clarke's overland journey in America (1814 edition, vol. ii., p. 169), in which the goat is described as "living in great numbers on the chain of mountains forming the commencement of the woody country on the coast," and as having been seen while the travellers were "passing the Columbia between the rapids and the falls."

Hamilton Smith, in a paper published in the *Linnæan Transactions*, 1822, states that he was assured that goats were found as far to the eastward as the "Lake of the Woods" in Manitoba. This statement was afterwards frequently copied, but is obviously incorrect, unless the goats have completely changed their habits since that time, as the country alluded to is and always has been utterly unsuited to their taste.

At the present time the march of civilisation is rapidly curtailing the range of the goat on the American side of the international boundary line, and Washington, Oregon, Idaho, and Montana are the only States which still afford the inaccessible mountain sanctuaries which this animal loves.

In Colorado, Wyoming, and Nevada, authentic instances of their occurrence have been noticed within the last twenty years, but it may be safely said that the present home of the mountain goat lies in the vast area of mountainous country contained by British Columbia and Alaska. In both these territories goats are extremely abundant, wherever high, rough mountains exist, from the waters of the Pacific to the Rocky Mountains, and from the boundary line to Peel's River, and possibly beyond to the point where the main range begins to slope down towards the Arctic Sea. Though spread over a very wide extent of country, the goat is, in a sense, local in its habits, and will haunt the particular mountain on which it was born until driven away by continual molestation.

Scientists have decided that this animal is really more allied to the antelopes than the goats, but to the ordinary sportsman and the miner of the West it must always remain a goat and nothing but a goat. Its clumsy external appearance, and close resemblance to the domestic goat, debar it from claiming a place among the antelopes, whose very name in Western America suggests the graceful, lively pronghorn of the prairies. Not that the goat is lacking in activity when jumping casually from ledge to ledge on the brink of awful precipices but he is slow of gait and ungainly of action, depending more on the inaccessibility of his haunts for his safety than on his own agility and keen observation. He is so absolutely stupid that a successful stalk brings little glory to the hunter, and the charm of the sport must always lie in the physical exertion necessary to force a way through the dense forest which

clothes the sides of the mountains of British Columbia and Alaska, and the enjoyment of the natural beauties disclosed to the view of the hunter when once he has reached the rocky summits. Some of the Indians of the North-West Territories, especially the Stonies, frequenting the main range to the southward of the Canadian-Pacific Railway, hunt the goats with dogs, often exterminating a whole band held at bay in a narrow defile between two peaks. As a trophy the heads are insignificant; the horns of the female are usually the best, being longer and more sharply pointed than those of the male. The skins are of small commercial value. and the goat will therefore find a safe home for many years in the unexplored mountains of the farthest North-west.

WARBURTON PIKE.

[*See also* ANTELOPES, *p.* 39.]

ST. ANDREWS.

GOLF—The game of golf consists in playing a ball, in as few strokes as possible, from certain starting places, called teeing-grounds, with various clubs suited to the nature of the stroke, into a succession of holes cut in the ground at varying distances.

Golf may be played on any park or common, but its original home is the "Links" or common land which is found by the sea-shore, where the short close turf, the sandy subsoil, and the many natural obstacles in the shape of bents, whins, sand-holes and banks, supply the conditions which are essential to the proper pursuit of the game.

Eighteen is the usual number of holes in a golf course, and in arranging the succession of these holes, care should be taken that they are so placed that "parties playing to one hole" shall not be crossed or met by parties playing to another. If sufficient suitable ground be not available to admit of this being done, it is better to limit the number of holes to 15, 12 or 9.

The extent and nature of the ground available will determine the distances between the individual holes, and these should be placed so as to take advantage of any natural features in the shape of hillocks, hollows, ditches, or other obstacles, to test the skill of the golfer, and lend variety and interest to the play. As a general rule, a hole should not be much shorter than 100 yards, or longer than 500 yards, while the entire course, if made up of 18 holes and measured from hole to hole, should be from $2\frac{3}{4}$ to $3\frac{3}{4}$ or 4 miles in length. For each hole there is a

starting point, called the teeing-ground. The first of these is usually marked out near the club-house, and the others are placed near the hole previously played but in such a position that parties playing from it will be out of the line of fire of those playing to the previous hole.

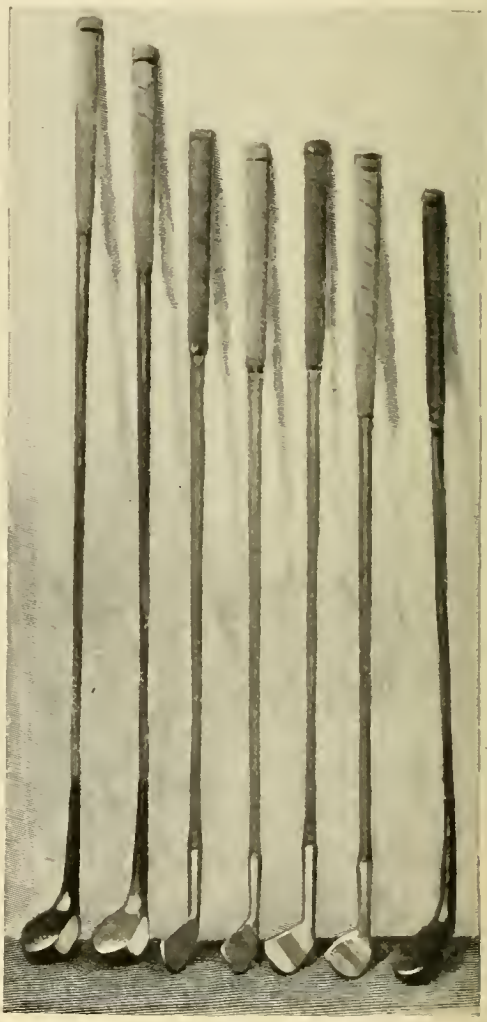
The game commences at the first teeing-ground, and the hole to which the ball is to be played is cut in a well-cared-for green, called the putting-green. The hole is round, $4\frac{1}{4}$ inches in diameter, and should be at least 4 inches in depth. To preserve its shape, it is usually lined with tin or iron, but this lining should be pressed down into the hole, so as to leave $\frac{1}{2}$ an inch of turf above its upper rim. If this is not done, and the metal rim is left flush with the surface of the grass, many balls that would otherwise go in, will either run round the rim or jump over the hole. A movable flag or disc, mounted on a stick or pin, is placed in the hole to indicate its position.

The putting-green, technically, is all ground within 20 yards of the hole (Rule 30), and all this space, if possible, should be of the closest and smoothest turf. It is not desirable to have the surface flat like a billiard-table, and an undulating surface, provided the turf be equal and true, will be found to make the putting more interesting and difficult.

Between the teeing-ground and the putting-green should be found, whether they be natural or artificially formed, various "hazards" in the shape of sand-pits or "bunkers," ditches, gorse, roads, or other obstacles, and these should be placed so as to catch and punish badly-played balls, while plenty of open space and good turf should be found between them to reward well-hit strokes.

Thus, supposing a hole be 250 yards in length measured from the teeing-ground, there should be a hazard of some sort extending right across the line of the hole, about 100 or 130 yards from the tee. Beyond this the ground should be good; but, guarding the hole again, and some 30 or 40 yards in front of it, there should be another hazard which the player would have to carry before reaching the putting-green. In addition, hazards may be placed on either side of the course to catch crooked balls, and also beyond the hole to punish those that are hit too strongly, but "blind" hazards—*i.e.*, hazards which are not visible to the player, such as sunk ditches or holes, should either be marked or filled up.

The Ball used in playing golf is made in various sizes, but that most in use measures about $1\frac{3}{4}$ inches in diameter. It is usually made of well-seasoned gutta-percha, grooved or notched on the surface, and painted white. Prior to the introduction of gutta-percha, golf-balls were made of feathers, forced into a case of leather, and the figures 27 and $27\frac{1}{2}$, &c., which are used to-day in differentiating the various sizes of balls, represent the weight in pennyweights of the old feather balls. Several kinds of composition balls, known generically as "putties," in contradistinction to the "gutties" or gutta-percha balls, though they have had a certain vogue, have failed to take the place of those made of the raw material. Balls made of fresh gutta-percha are properly seasoned and at their best about six months after being made and painted, but care should be taken that they



Set of Clubs.

are kept at an even and moderate temperature. If they are kept longer they are apt to become brittle, and, when struck, the paint will crack off.

There are many varieties of golf **Clubs**, but those most commonly in use, and all that are really necessary for the player, are as follows: **Driver, Brassy, Cleek, Mashie, Iron, Niblick, and Putter.**

All other golf clubs are either adaptations or modifications of these.

The driver and brassy are wooden clubs, and the putter may also be of the same material. The heads of the others are made of malleable iron. The heads of wooden clubs are usually made of well-seasoned beech-wood. Apple-wood is also used, but it is hard, and lacks the spring of beech-wood. The best shafts, both for wooden and iron clubs, are made of hickory, although good shafts are also made of ash, lance wood, greenheart, lemon tree, and a variety of other woods. The best heads for clubs are those in which the grain of the wood runs down the neck and along the head. If the grain runs across the neck, the club is sure to break in course of play. The finest shafts, though they are difficult to obtain, are made of split hickory—*i.e.*, hickory which is split from the wood with the grain, and not sawn off the plank.

The Driver—The driver is the club used from the tee if the hole be long, or if the ball lie well, whenever it is desired to play it as far as possible towards the hole. It is a wooden club with a long powerful shaft. The head should have plenty of wood in it and the face or hitting part of the head should be fairly deep. It should not be hollowed out in the middle, nor sloped back when the club head is laid on the ground.

The Brassy—The head of the brassy is smaller and shorter than that of the driver, and the sole is shod with brass, to preserve the wood when the ball has to be played from stony or hard ground. The face of the brassy is often "spooned" or sloped backward, so as to raise the ball in the air, and the smaller size of the head admits of its being used when the ball lies in a "cup" or indentation of the ground, which the driver head would be too large to enter.

The Cleek—The cleek is an iron-headed club with a straight and narrow face. The shaft is longer than that of other iron clubs, and it is chiefly used in playing full shots through the green, when the ball lies badly, or when a wooden club would take it too far.

The Iron—The iron has a deeper blade or face than the cleek and is shorter in the shaft. Irons are made of various weights and with various degrees of pitch or loft, and are chiefly used for approaching the hole, or for lifting the ball over hazards or out of sand.

The Mashie—The mashie is shorter in the head than the iron, and bears much the same relation to it that the brassy does to the driver. Like the iron, it is also made of various weights and degrees of loft, for particular strokes, and its uses are practically the same.

The Niblick—The niblick is used when the ball lies badly in sand, mud, whins or other hazards, or wherever it is necessary to use great force to extricate the ball from its position. The head is round, small and very heavy.

The Putter—The putter is used chiefly after the ball has been played on to the putting-green, to play the ball into the hole. The head is made either of wood or metal. It is more upright and the shaft is much shorter than that of any other club, and should be quite stiff. There are many varieties of metal putters, no one of which can be said to be better than another. The chief points to be looked to in a putter, its appearance and make being secondary considerations, are that it should be well balanced and not too heavy.

A Bulger is a wooden driver or brassy with a convex face instead of a straight one. It is claimed by its admirers, that a ball, struck on the heel or toe off this convex face, will still go straight, unlike a ball similarly struck from an ordinary club, which will fly to the right or left respectively. If, however, the club be drawn in towards the body, or thrown out from it in striking, as very commonly happens, the convex face will considerably augment the curve thus put upon the ball, so that any advantage it may possess in the one case is counterbalanced by its disadvantage in the other. It is generally conceded, however, that a ball, if struck truly with the apex of the convexity, will fly off quicker, and consequently travel farther, from the bulger than from a straight-faced club, where the area of contact is larger.

Spoons, or wooden clubs of different lengths, with their faces hollowed out at various angles, are now almost obsolete. The long spoon, mid spoon, short spoon and baffing spoon or baffy (the latter used for approaching the hole), are now rarely seen, having been supplanted by the brassy, and the modern irons and mashies.

Methods of Playing the Game.

The game is played by two or more sides, each playing its own ball (Rule 1), and the object of each side is to hole the ball in fewer strokes than the other.

There are two methods by which matches can be played, viz.: Match Play and Medal Play. In the former the players count by holes, and in the latter by strokes.

Match Play—In a match by **holes** the usual number of players is two, and the players begin at the first teeing-ground. The ball is placed on a small elevation, usually a pinch of sand, called a "tee." The player who strikes first, the order of starting being usually settled by agreement or by toss, is said to have the "honour," and this he retains until his opponent wins a hole. After both have struck from the tee, the player whose ball is farthest from the hole plays again, and so on until each player has played his ball into the hole. The player who has done the hole in the fewest strokes wins the hole, and if both have taken the same number, the hole is said to be "halved." At the end of the round, the player who has won most holes

wins the match, and if both have won an equal number, the match is said to be "halved" or "drawn." It must be observed in "Match Play," that the total number of *strokes* taken to the various holes does not directly affect the result, as for instance, A may take 3 to the first hole and B 8, but A only wins 1 hole. At the second hole A may take 6 and B 5, which makes them "all square" or "all even" in holes, although A's total strokes are only 9, while B's are 13.

Should one of the players, A, find himself a number of holes to the good, equal to the number remaining to be played, or, in other words, in such a position that his opponent, B, even by winning all the remaining holes, could only tie with him, A is said to be "Dormy," and should A win the next hole, the match is over, as he must eventually win by 1 hole at least.

Supposing A were 3 holes to the good, with but 3 holes remaining to be played, he would be "dormy three," and should he win the next hole he would win by 4 holes and 2 to play.

The remaining holes in this case are only two, called the "bye," and A would be said to have won the "Long Match."

In Match Play the game is counted between the holes by the terms, "the odd," "the like," "2 more," "1 off 2," and so on. Thus when A has played one more than B, he is said to have played "the odd," and when B plays he has played "the like." If A has played two or three more strokes than B, B then plays one off 2 or 3, as the case may be, and so on.

A plays the "Long odds" to B, when B lies much nearer the hole in the same number of strokes.

Foursome—A match by holes is often played by four players, two against two, and is called a foursome. Only two balls are used, the partners striking alternately, both from the tees and throughout the green. A stroke exacted as a penalty under any of the rules does not affect the rotation of play. For example, if A and B are partners, and A plays their ball into water, from which it has to be lifted and dropped under a penalty of 1 stroke, the next stroke is played by B and not by A.

Three-ball Match.—Three-ball matches are played by three players, each playing his own ball, but if the play is by holes, the scoring becomes somewhat difficult and complicated, and, if the three players are all playing against each other, it makes a better game to count by strokes.

A good three-ball match can be made when one of the players plays what is called the "best ball" of the other two. This means that in order to win a hole, he must do it in fewer strokes than either of the other two. It is obvious that in this form of match, the conceder of odds must be superior to each of the other two players.

"Colonel Bogey."—A method of scoring by holes which has lately become popular, is for the players to compete against a score supposed to have been made by "Colonel Bogey." This gentleman is simply the committee's embodiment of a first-rate player, and his score represents approximately the number of strokes which ought to be taken to each hole without serious mistakes. The players play each hole, not directly against each other, but against the "Bogey" score for the hole, and they win, lose, or halve it with "Colonel Bogey," according as their respective scores are better or worse than, or equal to his. The player who is most holes up or least holes down to "Colonel Bogey" at the end of the round, wins the match.

Inter-Club Matches.—Inter-club matches are usually played by teams of varying numbers, representing the best players in each club. The individual members of each team play hole matches against each other, the players being pitted against each other, as far as possible, in order of merit. At the end, the total number of holes won by each side is added up, and the club having a balance in its favour wins the match. Another, and perhaps fairer, method of judging the result, is to count the number of individual matches won, instead of the number of holes. This latter method supplies a fairer test of the general strength of the teams. By the former method it frequently happens that the failure of one member of the team brings defeat to his side.

For example, suppose two clubs play a match with teams of six a-side with the following result :—

X		Z	
A	4	G	0
B	1	H	0
C	0	I	10
D	0	J	6
E	2	K	0
F	1	L	0
	8		16

It will be seen that though the X team won four of the six matches, they yet lost by eight holes, although the Z team only gained two matches of the six.

Club Tournaments are played on the same principle as the Amateur Championship competition. The competitors are drawn against each other in couples, and at the conclusion of the first round, the winner of the first couple plays against the winner of the second couple, for their places in the third round, and so on until the final stage is reached, the survivor of which is the ultimate winner.

In arranging a club tournament or match of this nature, it frequently happens that the number of entries is such, that by drawing the couples together in the usual way, it will not be possible to conclude the tournament without having byes right up to the final stages. This is rightly felt to be unfair, and in such a case

the Bagnall-Wild system will ensure that no byes will occur after the first round.[1]

Medal Play.—(*See* special rules for Medal Play).

Medal Play is the method of playing a match, by counting the number of *strokes* required for the whole round, without reference to the number of individual *holes* lost or won. The player who completes the round in the fewest actual strokes, is the winner, if it be a scratch competition, and subject to his allowance or penalty if it be played under handicap. Ties are usually settled by playing another round.

A record score for a green, should be a score played under medal play, and not, as too often happens, a score compiled by a player playing a hole match.

Handicapping.—In order to enable an inferior player to make an even match with a superior, it is necessary that he should receive points, and there are various ways of doing this. In medal play, the weaker player simply receives a given number of strokes, which are deducted from his score at the end of the round. This same method is the usual one employed in match play, subject to certain regulations dealt with later.

Another method is for one player to concede the other a given number of strokes, which may be used singly or together at any hole or holes at the discretion of the receiver of the odds. These strokes are known as "bisques."

Still another method is, for the better player to allow the inferior a given number of holes to start with. For example, A gives B three holes of a start. B is then three holes up with eighteen to play, if the match is one of eighteen holes, but he has to play A level throughout the entire round. A has thus to beat B by four holes on the round to win the match.

Medal Play—For club competitions the handicaps of the members are settled by a committee, who usually proceed as follows: A score for the round is agreed upon as a good scratch score, say 80, and each player who is below scratch form, receives strokes sufficient to bring his average score down to this figure. It is usual to compel a new member of a club, or one whose play is not known, to hand in three or more scores for the information of the committee, before he is allowed to compete for a prize, and upon the average of these scores the committee decide what handicap he is to receive.

It is well to make the outside limit of all handicaps in club competitions 18 strokes. By this means overcrowding on competition days is avoided, and the absurdity of having a medal carried off by a beginner who is receiving, as sometimes happens, two strokes a hole from the scratch player is done away with.

When a player wins a prize, if his score be a good one, his handicap should be reduced immediately by one or two strokes, as the occasion may seem to demand, while, at the same time, the form of the other players must be watched by the committee, and their handicaps adjusted from time to time, irrespective of their winning prizes.

Should a scratch player be found to be winning too many handicap prizes, the best plan is to penalise him to the required extent by adding to his actual score. Thus, if he is penalised three strokes, and he hands in a card of 79, his score would read 79 + 3 = 82.

This saves the necessity of raising the handicaps of all the rest of the members.

Match Play—Reference has before been made to one or two methods of playing matches under handicap, but the one usually employed in club competitions is as follows:—

The handicaps for match play are based on the number of strokes received in medal play, but a smaller proportion is allowed in match play. The reason for this has been indicated above (*see* Match Play), viz., that an inferior player may take eight to a hole which his opponent does in three, but the latter thereby only gains one hole, and not five strokes, as he would in medal play.

It is impossible to settle absolutely what the proportionate difference should be in the handicaps of players for medal and match play respectively, as these would vary with every two players. For the purposes of club competitions, however, the table of match play odds adopted by the Royal Wimbledon Golf Club, and now in general use, which is here appended, will be found to work fairly satisfactorily.

Table of Match Play Odds.

In singles, three-fourths of difference between handicap allowances.

In foursomes, three-eighths of difference between the aggregate handicap allowances on either side. A half-stroke or over, both in singles and foursomes, shall count as one. Smaller fractions count as nothing.

Difference.	Strokes in		Difference.	Strokes in		Difference.	Strokes in	
	Singles.	Foursomes.		Singles.	Foursomes.		Singles.	Foursomes.
1	1	0	13	10	5	25	19	9
2	2	1	14	11	5	26	20	10
3	2	1	15	11	6	27	20	10
4	3	2	16	12	6	28	21	11
5	4	2	17	13	6	29	22	11
6	5	2	18	14	7	30	23	11
7	5	3	19	14	7	31	23	12
8	6	3	20	15	8	32	24	12
9	7	3	21	16	8	33	25	12
10	8	4	22	17	8	34	26	13
11	8	4	23	17	9	35	26	13
12	9	5	24	18	9	36	27	14

[1] By this system, after the competitors have been paired, the number of couples (counting the odd man, if there be one, as a couple), is subtracted from the nearest higher power of two, and the number forming the remainder is the number of byes.

Thus, in a single, if A's handicap is 2, and B's 9, the difference between them is 7, $\frac{3}{4}$ of seven is $5\frac{1}{4}$, or 5, as the quarter is not counted ; 5 is thus the number of strokes B receives from A.

In a foursome A's handicap is 15, and B's 4, making 19, and their opponent's C and D + 2 and 14 respectively, making 12. The difference between them is 7, $\frac{3}{8}$ of 7 is $2\frac{5}{8}$, or three strokes, which is the allowance A and B receive.

The number of strokes being settled in the above manner, they are to be taken, should they exceed or be less than 18, at the holes specified in the club table, in which it is clearly set forth. If the strokes to be given are 18, one is, of course, taken at each hole. If more or less than 18, it is well to have the table arranged, so that as far as possible, strokes should be taken at the more difficult holes. It is usual to print this table for easy reference on the back of the club scoring card.

Style.

A sardonic observer has defined golf as consisting in striking a small ball into a succession of small holes with instruments very ill adapted for the purpose. Though this is but a limited definition, it is strictly true as far as it goes. The golf club is not a weapon of precision. The length of its shaft, the shortness of the head, and its exceedingly restricted hitting surface, the small size of the ball, the inequalities of the ground, and the state of the weather are all matters that make a successful stroke at golf most difficult of accomplishment. Moreover, it is not sufficient to hit the ball with the correct strength and direction, wherever it lies, on the proper part of its surface ; it must also be hit with the proper part of the club. If both these things are not done, the result, unless favoured by luck, will be failure.

The part of the club used in accurate striking is the centre of the face, *i.e.*, half-way between the sole and the crown of the head, and half-way between the toe and the heel. The ball is hit correctly with the club when it is struck on the centre or a little below, at the back of the ball, and it is this spot, and not the top of the ball, that the aim should be taken from, and the eye kept on, in the process of striking. These two points, then, must be brought in contact, if the stroke is to be successful, no matter how the ball lies, except in the case of sand, &c., which will be dealt with later ; and it is towards the consistent and harmonious accomplishment of this object that a golfer's style should be built up.

As the best players all exhibit differences more or less marked in the matter of style, it is impossible to say, except perhaps from the æsthetic point of view, that any one style is more correct than another. The measure of the excellence of any particular style is its consistent success, as consistent failure must point to some radical defect in its constitution. It must further be observed that the divergences in style amongst good players are the result, not of any essential difference in the force and accuracy with which the club head ultimately reaches the ball, but in the manner in which the club is handled to attain these objects. Individual idiosyncrasies of stature, strength, and temperament are sufficient to account for these differences, and the beginner, in trying to develop a good style of golf, will do well to observe the points where the styles of good players will be found to agree, and to pay no attention to the unimportant details where they differ. Style may be said to cover the player's grip, or grasp of the club, his stance, and his manner of swinging.

Grip—The grip of the club is a most important matter, as on it depends largely the command obtained over the club during the process of swinging.

Until recently, when golf became popular in England, there was, speaking generally, but one recognised way of holding and swinging a golf club. It is true that there were what have been called "the opposing schools of St. Andrews and Musselburgh," but the difference in their practice in this respect was practically nil, and any other differences that existed between them were the result either of the natural rivalry between two great golfing centres, or due to the different character of the two greens, each of which favoured the practice of certain kinds of shots more than others. But of late years in England a class of golfers has sprung up, born and bred

Cricket Grip.

altogether outside the old golfing traditions ; men whose traditions are all of cricket, and to whom, perforce, a golf club is but a kind of bat wherewith to hit the ball. With this view of the matter, these players have developed a method of holding the club and hitting the ball which,

while it has in a few cases met with success, is not one that can be recommended for the adoption of beginners. The grip for this hitting or

PROPER GRIP.

cricketing method of using a golf club may be dismissed shortly. It requires great strength of hand, wrist, and forearm, and the club is gripped tightly with the palms of the hands, the fingers holding firmly, the back of the right hand being kept well under, as shown in the illustration. For the proper or swinging method of using a golf club, a correct grip is of the first importance, and the hold is not so much a grip as a grasp. The club should be held firmly, but not tightly, with the fingers of both hands equally, the handle resting on the part of the palm just below the fingers, and not gripped with the hollow of the palms. The hands should touch each other, and the thumbs should lie over the handle of the club in an oblique direction, and not point down it. By this means the club will have the requisite play in the hands during the process of swinging; for it must be observed that, in swinging, the palms open out as the club is swung backward, so that it is gripped at the top of the swing practically by the fingers alone. As the club descends again, the palms close on it, and the stroke is delivered with the hands as shown in the illustration. To hold on tightly with the same immovable grip all through would check the swing, and prevent the club describing the true arc in the air which is essential to accurate and far hitting.

The grip, or the manner of it, should not vary with different strokes, and as a matter of style, a player should endeavour, as far as possible, to make all the various strokes in his play, in regard to grip, stance, and swing, in the same way. His half shot should be a part or segment of his full shot, his quarter shot like part of his half shot, and his putt but a smaller stroke in the same manner.

Nothing looks worse or is more fatal to good and consistent golf than for a player to have a different grip and stance for his various strokes; to play, for example, his full shots off the left leg and his quarter shots off the right, or to stand more or less erect for his full strokes and to huddle himself into a heap when playing an approach. The part of the handle to be gripped will depend entirely upon the manner of swinging adopted by the player. If the swing be long, more command will be obtained over the club by holding it near the top of the leather, if the swing be short, or, if the hitting or cricketing method be employed, it will be found that a shorter grip will be the more serviceable.

Stance—The position of the player's feet relative to each other, their distance apart, and the distance of the ball from each, depend on a variety of considerations, and it is impossible to lay down any hard and fast rule in these respects. The best players exhibit wide differences in the matter of stance, but these are entirely due to differences in stature, length of reach, and the length of club used. As a general rule, however, it will be found that the player has most command over the ball if he stand so that it lies opposite him at a point nearer his left foot than his right. The player should stand easily, facing the ball, his legs apart but not too much straddled, with his toes slightly pointed outwards, at such a distance from the ball that he can reach it comfortably by placing the club head

J. H. TAYLOR'S GRIP. TOP OF SWING.

behind the ball, and by holding the handle opposite the middle of his body, with the arms slightly bent outwards. His position should not be so

far away from the ball that he has to reach forward in order to hit it, nor so close that his motions are cramped in the act of striking it. It is not of importance whether the feet are placed in a line with the ball or whether the right or left foot be slightly advanced, as the best players exhibit all these variations. The important matter is to take up, as far as the nature of the ground and the length of the club will permit, the same stance for each stroke. If a player is constantly changing his stance, it will have an absolutely fatal effect on his play, and will be the most fruitful cause of heeling, toeing, slicing and topping the ball.

Swing—For all balls that lie fairly on the turf, tee-shots of course included, the player will do well at the outset to think of the course to be described in the air by his club head during the stroke, as a circle or segment of a circle. It must not be supposed that it is meant that the club head must describe with geometrical accuracy a segment of a circle, if the stroke is to be a correct one; but simply that the course described by a club head, when the club is truly swung, more nearly resembles a circle than any other geometrical figure. With this view of his swing clearly in his mind, it will be obvious to the player that, to strike the ball fairly, the club face must reach it when the head is at the lowest point of its circumference; that is, after it has ceased to be describing its downward course and before it has commenced its upward. If this be not done, the stroke must be more or less missed, and the player must so arrange his stance as to ensure, if he swing accurately, that the club face will find the ball in the right place when it descends.

Addressing the Ball—In taking aim or addressing the ball, it is the almost invariable practice to pass or flourish the club head a few times backwards and forwards over the top of the ball, in the direction of the proposed stroke. This is called the "waggle," and has for its object the freeing of the wrists and arms, and of ensuring that the club lies properly in the hands. In addition, it is essential after the waggle to rest the club head for a moment on the ground close behind the ball, in the exact position in which the player wishes it to return on the ball. To do otherwise, as, for example, to place the toe or heel of the club opposite the ball, to place the club on the ground altogether clear of the ball, or not to ground it at all, is to court failure. If any of these eccentricities be indulged in, the difficulties of the stroke are enormously increased, as the player, after, as it were, leaving the rails to start with, has to find them again before reaching the ball, with consequent loss of force and great risk of inaccuracy.

The ball having been addressed in accordance with the foregoing instructions, the waggle, which must not be unduly prolonged, satisfactorily accomplished, and the aim taken, the next consideration is the swinging of the club.

As the swing is to be circular, the club head must be made to pursue the same orbit in the upward swing as in the downward, if the maximum of force and accuracy is to be attained, and all the motions of the hands, wrists, arms, and legs used in the upward swing will be simply reversed as the club comes downwards.

In commencing the upward swing there should be no swaying of the body to the right

JOHN BALL, JUNR. FULL SWING.

side, nor should the swing of the club be commenced by pulling the hands to the right in advance of the club head, as this will throw the swing out of gear at its commencement. The club should be swept backwards and gradually upwards evenly and without jerk, the shoulders turning round as the club rises till it is well over the neck or right shoulder. The wrist and elbows will bend, following the upward motion of the club, and the grip open, as before indicated, as the club reaches the top of the swing. The backbone must be kept as rigid as possible and used as a pivot, round which the shoulders must work in making the swing. The head must also be kept steady, and the eye firmly fixed on the ball.

As the club is swung upwards the player will gradually transfer his weight, which in addressing the ball rests on both legs equally, to the right leg, his left knee turning inwards and his left heel rising in response to the turning of his shoulders as the club goes round. As has been said, the downward swing is an exact reversal of

all these motions. There should be no pause at the top of the swing. The upward swing and the downward are one act and should be as harmonious and continuous as possible in every respect. A great deal of nonsense has been written and talked about the necessity of swinging "slow back," and the curious thing is that the very players who are responsible for the dictum are themselves notorious for the rapidity with which they swing the club both backwards and forwards. The truth is that, so long as it returns on the ball faster than it went up, and the balance is maintained, the club cannot be taken too fast back. This holds true with regard to all golfing strokes. Even on the putting-green, the backward movement of the club should be of the same nature as the forward, and the ball should not be struck with any sudden or jerky motion.

Up to a certain point, in a full shot, the longer the swing, the better, as the larger the circumference described by the club head the greater momentum will it gather before it reaches the ball; but care must be taken that the club is not swung so far round that the balance is lost and force expended uselessly in recovering it.

It must not be supposed that the stroke is finished when the club head has reached the ball, as both force and direction are imparted by what is technically known as the "follow through." The arms and shoulders following the direction of the swing are, as it were, thrown after the ball, and, the body turning round as the club descends, its weight is also thrown in, and the player at the end of the swing is facing the direction in which the ball has flown, the club going up over his left shoulder. The player should have the habit, so important is this "following through," of regarding the ball merely as a point *through* which the club head is to pass in the course of its circuit, and not a point where it is to be arrested. Another important matter to be noticed is that the club is swung at that angle round the shoulders, which gives the player most command over it both for direction and distance. It must not be swung at too upright an angle, which will be found to prevent the player getting the weight of his body into the stroke, nor must it be swung too low round the body, as this will cramp the player's motions and prevent the free use of his arms. Consistently with getting the weight of the body into the swing, a high or perpendicular swing is better than a low or more horizontal one.

Various Kinds of "Lies"—When a ball has been struck from the tee, the variety of places where it may ultimately rest awaiting the next stroke is infinite. If it be hit fairly and on the proper line it should lie fairly well, but if topped or hit to the right or left of the course, "grief," in the shape of a bunker or other hazard, will probably be its portion.

The method of hitting a ball that lies fairly on the turf, not being in any kind of hollow, is the same as for the tee stroke. There is no necessity to hit the ground with the club in striking the ball, as this can only check the force of the blow and most probably will have the effect of sending the ball in a contrary direction to what was intended. On the best of links, however, there are numerous small indentations on the sward, into which a golf ball frequently rolls, and a lie of this kind demands for its proper negotiation a considerable modification of the method used in hitting a fair lying ball. If the cup is only a slight one, the driver is the club to use,

JOHN BALL, JUNR. FULL SWING.

but if it be at all deep the brassy or cleek, with their slightly sloped faces, will be found of more service. The stand should be taken with the ball a shade nearer the right foot than usual, and the club gripped a little more firmly. It will be obvious that were the swing used in playing a fair lying ball to be employed, the ball would be either partially topped and driven into the far side of the cup, or the ground would be hit by the club head before it reached the ball, and its force checked. To avoid this, it is necessary to play the stroke with a more downward swing, so as to slip the club face in between the back of the cup and the ball. The "follow-through" in this case goes into the ground, but the ground is not touched by the club head till the ball is away. The slope on the face of the club, if the ball be truly hit, will raise it over the opposing slope of the cup, and a long shot will be the result. This stroke is called a "jerk."

A ball that lies fairly and not cupped on a slope towards the hole, is known as a "hanging-ball," and should be played in the same way with the exception, of course, that the club head does not strike the ground at all after the ball has been hit.

It frequently happens that a ball rests on a slope, either above or below the player. In both cases the sole of the club, in taking aim, must be grounded squarely with the slope. If the ball lies above the player, the club should be held shorter, and, if below him, allowance must be made for pulling the ball, which is in this case very difficult to avoid.

If a ball lies in thick bents, rushes, or long grass, a niblick or heavy mashie is the best club to use, as their weight enables them to cut through the grass better, and they present less surface for the grasses to catch on than the longer faced clubs.

Balls in Sand—When a ball lies in a sand bunker the first consideration for the player should be, "Shall I play it backwards, or sideways on to the grass, or try to get it over the face of the bunker nearer the hole?" and the nature of the lie, the width of the bunker, and the distance and height of the opposing face will decide his choice. If the ball lie close under or near the opposing face, he will have no alternative but to play it out to one side or the other. Unless it be very much buried, however, and if the face to be lofted over is not too near, the ball may be extricated in a forward direction. A firm downward and slightly forward stroke with a niblick or heavy mashie on the sand immediately behind the ball, on which spot, and not on the ball, the eye must be fixed, will cause the ball to spout upward and forward. Sometimes a ball is found actually teed in a bunker, in which case, of course, any club may be used that will take the ball the required distance. Great care must be taken with these shots, however, as to be successful the ball must be picked off quite clean, and it must also be remembered that it is not permissible to ground the club before striking.

When the ground is hard, a ball may sometimes lie close to, and in front of, a steep hazard, such as a hedge or fence, in a deep cup or heel mark. To loft such a ball over the hazard looks a hopeless task, but it may be very simply effected. It is only necessary to strike it sharply downwards against the opposing side of the cup with an iron putter, when it will jump upwards and forwards over the obstacle. The face of the putter must be held downwards and care must be taken that the ball, in rebounding, does not strike the player or his club.

Approaching and Putting—The term "approach" is applied to all shots with iron clubs that are intended to reach the putting green, and it need hardly be said that in playing an approach the player's object should be to lay the ball as near the hole as possible, and with luck, to hole it.

For approach shots of from 80 to 150 yards, or thereby, it used to be common to take what were known as half-shots with various clubs. A half-shot is a shot played with a half-swing. This, however, is an extremely difficult stroke to master or to play consistently, and nowadays, when cleeks, mashies, and irons are made with all degrees of loft, it is only an unnecessary complication of the game. A full approach shot with a lofted club is much more easy to play than a half-shot with a straighter faced club, for the reason that in the former the player is only concerned with hitting the ball clean and straight,

JOHN BALL, JUNR. APPROACHING.

whereas in the latter, he has also to think what strength he must use to reach the required distance. Once the art of hitting truly with an iron club is acquired, full shots with either cleek, mashie, or iron should present no difficulty, and it is only when the approach is shorter, say from 80 to 20 yards, and full strokes are no longer possible, that difficulty will be experienced. These shorter approaches are often called quarter-shots, on the same principle as half-shots, to indicate that a quarter-swing is used in playing them.

The stance for an approach shot is of the same nature as for any other, though the ball may be a little more opposite the middle of the fork, and of course the shorter handle of the iron club will necessitate a stance somewhat nearer the ball.

The player must stand firmly on his feet, which, together with his legs, must on no account

be moved, and the shot is played with the arms and wrists alone, the body being kept as steady as possible.

For wrist shots the player may permit himself a more exuberant waggle than for full shots, as this will ensure the wrists being kept free. The grip should be firm, so that the muscles of the forearm are taut, and the ball should be struck sharply. In this stroke, the right should be the master arm and the left only used to steady the club and help to bear its weight. If there be much pitch on the face of the iron or mashie, it will be almost necessary to take a little turf in making a quarter-stroke, even if the ball lie well, for it will be found that, unless this is done, the ball will be struck with the lower part of the face, and consequently will not be lofted sufficiently. Some of the best players invariably take a good deal of turf, no matter how the ball lies, but it must be pointed out that if this shot be played accurately, the piece of turf cut out by the iron is the piece immediately under and in front of the ball, and not the turf behind it, and that the ball is struck, if not first, at any rate simultaneously with the ground. It is of course evident that these shots can only be played where the ground is more or less soft.

It is sometimes desirable to make the ball stop as dead as possible after it reaches the ground, as, for instance, if the hole be close to the edge of a bunker; and this may be done in two ways, either by putting cut on it or by

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imparting a back-spin to it which will counteract its forward motion.

Cut is put on the ball by drawing the arms in, and the face of the club across the ball in the act of striking. This has the effect of putting a

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right-hand spin or slice on the ball, and due allowance must be made for this in deciding the line to the hole. Back-spin is imparted in a similar way, but the swing is of a downward nature, and the ball is struck by the face of the iron as it crashes down into the turf. Both these strokes are of extreme difficulty, though the latter, as it permits the player to play straight at the hole, is perhaps the easier and more advisable. If the ground be at all hard and there are no hazards intervening, it is always better to play an approach by running the ball up with a straight-faced club, such as a cleek or putter. On hard ground, apart from the difficulty of hitting accurately with a lofted club, the ball is much more likely to be deflected from its course on alighting, than when it is run along the ground. There is an idea that it is not sportsmanlike to use a putter for these shots. Nothing could be more ridiculous. The object of an appproach is to get the ball as near the hole as possible, and the best club to use is the one that will achieve this most successfully and consistently.

Putting—It is commonly said that matches are won or lost on the putting-green, and experience certainly bears out the remark. It will not be contended that putting is more difficult than any other branch of the game, for there can be no doubt that, as a general rule, between good and bad players there is less difference on the putting-green than anywhere else. But probably

the explanation lies in the fact that there is no part of his game in which a player goes off more completely than his putting.

He will consistently hole out two-yard putts one day, and the next as persistently miss those of a foot, and be quite unable to account for his failure.

Without an "infinite capacity for taking pains" a man will never be a good putter. A player cannot begin to study his putt too soon. Even for the approach shot, unless it is a very long one, he should first of all go forward and examine the ground, so as to select the spot for his ball to pitch on that will give him the best putt for the hole. The ball having been played on to the putting-green, if it is still some yards from the hole, it is well, before approaching the ball, to walk first to the hole and examine the geography in its immediate neighbourhood. A putting-green is not flat like a billiard table, and even the best of them have their differences of surface, one part being keen and smooth, and another stiff and rough, according to the nature of the grass. Then there are the undulations and slopes of the ground which will have their effect on the ball as it travels towards the hole. But more particularly, in a long putt, the ball will be travelling slowest, if it has strength to reach the hole, in the last yard or so, and it will consequently be then that it will be most affected by any inequalities or irregularities on the green. The line that the player will ultimately select to play the ball at the hole will therefore be determined chiefly by the character of this last crucial yard or thereby, and those few feet of turf ought to be the first object of his consideration in studying a putt. When this examination has been made, the player should walk slowly to his ball, removing any loose obstacles from the line likely to deflect it from its course, and taking a mental note of any other facts likely to influence it, but bearing in mind that the higher rate of speed at which the ball will be travelling at its start, will minimise considerably any inequalities of the green that may there exist.

Having arrived at his ball, the player should get behind it and survey the ground to be traversed from that position; for it is from the ball to the hole that the line must be taken, and not from the hole to the ball. The information gathered from his examination of the ground near the hole is only to be applied to modify his opinion of the line after he has arrived at his ball. If he has also studied the line from the hole to the ball, he will most probably only confuse his mind with two quite distinct lines. He will now determine the strength with which it will be necessary to hit the ball, to enable it to reach the hole, by travelling on the selected line, and thereafter address himself to the ball.

The stance for putting, as before indicated, should be of the same nature as for other strokes, except that as the putter is more upright and shorter in the shaft than other clubs, it will be necessary to stand more over the ball. The player should not stoop low over his putt nor straddle his legs too much. It is a good and useful plan to place the head of the putter in front of the ball, and then behind it, searching in this manner to get the head of the putter absolutely at right-angles to the projected line

J. H. Taylor. Putting.

of the putt, but in doing this, care must be taken that the ball be not moved. In a long putt, if there be any point half or three-quarters way to the hole, on the direct line, which is marked by a daisy or can otherwise be remarked from the ball, it will simplify matters very much if the player plays his ball for that point, giving the ball, of course, the requisite strength to reach the hole.

The club being firmly grasped in the usual way, the aim taken, and the eye firmly fixed on the back of the ball, it should not be allowed to wander off again to the hole before striking, but the club should immediately be drawn backwards, and returned on the ball at the same angle, and with the required strength. Great care must be taken to aim with the very centre of the putter. A ball struck on the toe or heel of the club, will not run straight any distance.

If the green be at all rough, a putter with its

face slightly set back will be found to keep the ball in a truer course. With an absolutely perpendicular face there is a tendency, unless the green be very smooth, for the ball to be deflected at its start. The lofted face enables the player to start the ball straight, as it will be slightly lofted for the first foot or so. In shorter putts, to which the line is straight, the ball should be played firmly for the back of the hole. If the player aims at the near lip, the chances are that the ball either "lingers shivering on the brink" and does not go in, or rolls off to one side or the other before reaching.

To take too long over a putt is as grave an error as to hurry it. Everything, however, should be done carefully and deliberately, and the player, having made up his mind as to the strength and direction, should hit the ball confidently, always bearing in mind the putter's golden maxim, "Never up, never in."

It sometimes happens that the player who is farthest from the hole plays his ball, which does not go in, but gets between the hole and his opponent's ball. If it rests less than six inches from the other ball, it has to be lifted till the other is played. If more than six inches, it is called a "Stymie," and there are two ways of negotiating it, viz., either by playing round the obstructing ball, or by lofting over it. To play round it, unless favoured by the lie of the ground, is extremely difficult, and must be done by putting on spin or cut, either with the toe or heel of the putter. The lofting shot is also a very delicate stroke. It must be played with a firm wrist, from a well-lofted mashie or iron, and not too strongly.

Topping, Duffing, Sclaffing, Heeling, Toeing, Pulling, and Slicing—Having considered heretofore the various ways of playing golf strokes correctly, it will now be necessary to deal with the various vices or faults into which players fall. With the exception of failing to hit the ball at all, or "missing the globe," as it is termed, the above list forms a complete catalogue of the seven deadly golfing sins.

Topping, as its name implies, consists in striking the ball on the top, with the lower edge of the club face, whereby an ugly gash is inflicted on the ball's surface, and it travels along the ground but a short distance. This is one of the most distressing maladies from which the golfer's game suffers, and its causes may be manifold. A firm determination to keep the eye on the back of the ball, and not on the top, and a little attention to stance, will usually correct it.

Duffing—The verb "to duff" does not mean, as might at first appear probable, to play as a "duffer" or hopelessly bad player, but simply to hit the ground first, behind the ball, so that the ball is struck with the upper edge of the face, and sent only a short way into the air. Here, again, a little attention to the stance will probably correct the fault, as duffing is very frequently caused by the player having his ball too near his right foot. It may also be caused by the player unconsciously ducking his body in the act of striking.

Sclaffing—Sclaffing is also the result of striking the ground behind the ball, but in this case the club head skids more over the surface of the ground and the ball may after all be hit perfectly truly and with little diminution of force. Sometimes a sclaffed ball travels a very long distance, as the club head comes off the ground in an upward direction, and seems to impart a forward spin to the ball, which takes great effect as soon as the ball touches the ground. Sclaffing, however, is a vice like duffing or topping, and must be corrected if a golfer's game is to become good and steady.

The terms "**Heeling**" and "**Toeing**" explain themselves, meaning as they do simply to hit the ball with the heel or near part of the face, or the toe or farther part. As the weight of the head is concentrated immediately behind the centre of the face, a ball struck anywhere outside this point will not travel so far as it would if hit exactly with the centre. If hit on the heel, the ball has a tendency to fly off to the right, and if on the toe, to the left. The usual cause of heeling is that the player is standing too near his ball, and of toeing, that he is too far away. If attention is paid to the stance, and if the player is careful to place the centre of the club face opposite his ball in addressing it, and before swinging, the tendency to heel or toe will probably disappear. As before pointed out, this correct aiming is a most important matter. It is quite common to see players who have contracted the habit of heeling the ball, endeavouring to cure it, by aiming with the toe, and *vice versâ*, in the hope that a compromise may be effected. The result of this can only be, that the player gets rid of one fault to contract the other, and however badly he may be playing, the golfer should never aim with any part of the face, except the part he desires to hit the ball with.

Slicing—A ball is sliced, when the club face is drawn more or less across it, by the player pulling his arms in towards him as the club descends, thereby imparting a right-hand spin to the ball, which robs it of much of its force and causes it to curl to the right. Though the cause of slicing is obvious, it is a very difficult vice to eradicate. It can only be cured by earnest endeavours to "follow through," by throwing the arms well out after the ball, and not checking the downward swing. It should be remembered that it is perfectly possible to slice with the toe as well as the heel, or indeed with any part of the club face.

Pulling—A pulled ball is one hit on the toe of the club, the left arm being pulled round at the finish of the swing, and the head of the club

slightly hooked inward. The ball flies off with a left-hand curve on it, and sometimes travels a great distance. Pulling is not necessarily a vice, as many players habitually play for it. If the wind be blowing across the course from right to left, and a little behind the player, a pulled ball, if it be not hit too much on the toe, will travel farther than a clean hit one. The player plays his ball well to the right of the line, and more or less into the wind. As the ball begins to descend, the pull will take effect, and the ball will turn inwards towards the hole, so that the wind will blow directly behind it. It will thus travel farther than if played direct for the hole, as in that case the wind would be blowing across it during the whole course of its flight. Unless intentionally played for, however, pulling is as serious a vice as heeling, and both will land the player in endless difficulties.

Etiquette of Golf.

The following customs belong to the established Etiquette of Golf and should be observed by all players :—

1. No player, caddie, or onlooker should move or talk during a stroke.

Note.—When a stroke is being played, no person should move or stand behind the line of fire. The proper place for all onlookers is either behind the player's back at a safe distance or directly opposite him as he addresses the ball.

2. No player should play from the tee until the party in front have played their second strokes and are out of range, nor play to the putting-green till the party in front have holed out and moved away.

3. The player who leads from the tee should be allowed to play before his opponent tees his ball.

Note.—The object of this is to leave the player unhampered in his choice of tee and unobstructed in his movements by his opponent and his caddy. The player who leads from the tee, after playing his stroke, should at once step aside and remain quiet until his opponent has in turn teed and struck off. In playing through the green, a player should take care that he does not get in front of, or obstruct in any way, his opponent's play.

4. Players who have holed out should not try their putts over again when other players are following them.

5. Players looking for a lost ball must allow any other match coming up to pass them.

Note.—After giving permission for a match to pass, players should not play again, but remain where they are until the match has passed and gone out of range.

6. A party playing three or more balls must allow a two-ball match to pass them.

Note.—A player playing by himself has no status and must allow all matches to pass him if required.

7. A party playing a shorter round must allow a two-ball match playing the whole round to pass them.

8. A player should not putt at the hole when the flag is in it.

Note.—A player should be careful, in studying his putt, that he does not walk across or along the line of his putt. The penalty for this is the loss of the hole. (*See* Rule 34.)

9. The reckoning of the strokes is kept by the terms, "the odd," "two more," "three more," etc., and "one off three," "one off two," "the like." The reckoning of the holes is kept by the terms, so many "holes up" or "all even," and so many "to play."

10. Turf cut or displaced by a stroke in playing should be at once replaced.

Garden G. Smith.

LADIES' GOLF—One of the earliest references to Ladies' Golf (if we exclude the probably apocryphal story of Mary Queen of Scots as a golfer) says that in the eighteenth century "the women of Musselburgh often played Golf on holidays." And on the minutes of the Musselburgh Club is recorded, in 1810, the decision to present prizes ("a new creel, a shawl, and two silk handkerchiefs"), to be played for by the fish-wives of the town.

Leaving these earlier records, we find that some of the oldest Ladies' Golf Clubs are the Westward Ho! Club, which was originally founded in 1868 and reconstituted in 1893; the London Scottish, started in 1872 and reconstituted (as the Wimbledon Ladies' Golf Club) in 1890; the Pau Club, founded in 1874; and the Lytham and St. Anne's, in 1886. Several other clubs, notably the Royal Eastbourne, Blackheath, Ashdown Forest, and the Royal Belfast came into existence within the years 1887–1889. The Ladies' Links at St. Andrews is only a putting course, and this club can hardly be included among serious golf clubs.

The progress of ladies' golf can only be appreciated by those who have carefully watched the scores returned in club competitions, the records of inter-club matches, the championships, and, above all, the extraordinary improvement in style displayed by ladies on the links. This progress has only been attained by infinite perseverance and pluck, and in the face of many adverse criticisms by captious golfers of the other sex. At this point we may say, without undue conceit, that the form displayed in the Ladies' Championship this year (1897) at Gullane has done much to dispel the doubt, still lingering in the minds of older-fashioned golfers, of the ability of women to play golf well.

In many clubs where six or seven years ago

there were only two or three good players, there are now often eight or ten whose freedom and accuracy of play would hold their own on any links. As every year the tendency is to lengthen ladies' links, giving them more brassy and cleek play through the green, ladies' golf is sure to improve still more. This will make them stronger players, and induce greater steadiness of play, with those qualities of endurance and grit so necessary for a successful golfer. Even now, all the best lady-golfers play regularly over the full men's courses, where, in almost every instance, they are welcomed and encouraged by the members.

This desire of scratch lady-players for a longer course and one of eighteen holes is perfectly natural; for they know that if they are given longer carries, and many and more difficult hazards to negotiate, they will, with practice and determination, surmount these obstacles, and become longer drivers and more skilful in their approaching. Ladies will not be satisfied now with the drive from the tee and the short approach shot that have hitherto been their portion. True, there are still very few eighteen-hole courses, and not many long ladies' links, but it is safe to predict that this will not be the case a few years hence. The smallness of the greens on ladies' links is also a very real grievance, as the approach-putt becomes almost an unknown quantity. There is certainly too great an element of luck in approaching on to a small green, as any inequality in the surrounding ground may unduly punish a good approach, which if played to a really large green, would pitch *on* it, and of course, stay there.

In speaking of the leading qualities of ladies' play, one does not intend to draw any comparison with that of men, but simply to discuss as shortly as possible the points in which the average player shines or fails. So, while freely acknowledging her many excellent qualities, one is bound to say that it is more often in the lack of nerve or the fault of judgment, than in any actual defect of play, that her mistakes are made. And yet a woman's natural quickness of perception and rapidity of thought should stand her in good stead at critical moments in a match. Having found this one fault, it is difficult to speak too highly of the quality of a really scratch lady-golfer's play. Her easy full-swing in driving, her accurate approaching and her marvellous putting compel admiration from the coldest critic. Perhaps the most striking feature of her play is her accuracy. She may not be an enormously long driver, but the ball is driven as straight as a die, and no distance is wasted by driving out of the course. And this straightness is what scores so heavily in her favour in the long run. For where a long and somewhat wild driver may drive some excellent balls from the tee, or through the green, many of the other drives will probably land the ball in hopeless trouble, far out of the course. Her accuracy in approaching is remarkable, whether in the short chop stroke on to the green, or in the far prettier and more scientific wrist shot. It is this neatly played wrist stroke which puts the hall-mark of excellence on any golfer. Her accuracy on the green is often wonderful, and perhaps needs less comment than other points of her game. But here it must be frankly confessed that, on the green, many indifferent lady players, who at other points of the game take a very humble position, come well to the front, and putt with consistent excellence. Both in the long approach putt from the far edge of the green, and also in the deadly yard-long putt which is the undoing of so many players, she holds her own with the best. Indeed one is often much disconcerted by the play *on* the green of a lady who has excited sincere pity by her efforts to reach it.

The golf-clubs used by ladies are in almost every case rather lighter in weight than men's clubs, and, of course, shorter, in proportion to the height of the player. All good professionals advise ladies to use light clubs, especially light drivers and brassies, and in very many instances this advice is followed with complete success.

In these up-to-date times it is hardly necessary to say anything about the suitable dress for lady golfers. For though at any open meeting one still sees a few grotesque figures, either aping man's attire, or limply trailing about in frilled petticoats and flower-trimmed hats, the bulk of the players are neatly and serviceably dressed in plain tailor-made coats and skirts, sailor-hats and strong nailed boots.

With the numerous golfers' annuals, guides, &c., giving particulars of the eighty or ninety ladies' golf clubs in the United Kingdom (fifty-four of which are in England) it is, perhaps, rather invidious to single out any club for special notice. It is enough to say that, of the London clubs, Prince's (Mitcham) is perhaps the best, or very soon will be so, when the new eighteen-hole course has been put into thorough order. Of the provincial clubs, the West Lancashire (eighteen holes) is quite one of the best. Other good links are the Ashdown Forest, which is a very sporting course of nine holes, and immensely improved lately; the Mid-Surrey (in Richmond Park) which is a long course but somewhat monotonous; and Wimbledon, which is short and tricky, and most unhappily hedged in by the restrictions of the Conservators of the Common.

In the management of their club affairs women succeed all along the line. Many clubs that one could name are excellently carried on, the tact, energy and resource displayed by the secretaries being truly admirable. It takes all those qualities, and more, successfully to carry through the work of a large open meeting of players from all parts, to say nothing of the

everyday work of the club itself. Very careful financing is also needed in managing the funds of ladies' clubs, as in many cases the subscription is a moderate, not to say an insignificant one, and much is expected by the members in the up-keep of the green, and in many other ways.

The Ladies' Golf Union, which was founded in 1893, has done much in bringing together the various clubs belonging to it, and in trying to institute some approximately uniform system of handicapping. To the Union's excellent hon. secretary, Miss Pearson, is due practically all its success. The Union also inaugurated the Ladies' Championship, which was held first at Lytham and St. Anne's in 1893; then at Littlestone-on-Sea in 1894; at Portrush in 1895; at Hoylake in 1896, and at Gullane (N.B.) in 1897. The winners of their respective years were, in 1893, 1894 and 1895, Lady Margaret Scott; in 1896, Miss Pascoe; and in 1897, Miss E. C. Orr. This year's championship was of very special interest for several reasons. The entries (over 100) were more numerous than ever before; the championship was held for the first time in Scotland; and last, but certainly not least, the Scotch representatives came splendidly to the front.

If women will only strive to keep up the steady progress in the royal and ancient game which they have shown during the last few years, they may face their golfing fate with a light heart.

LOUIE MACKERN.

GLOSSARY

Addressing the ball—The player's method of standing and handling the club preparatory to striking the ball.

All Even—An expression used to describe the position or result of a match when neither side has gained any advantage. *See* HALVED.

All Square—Synonymous with *All Even*.

Approach—The stroke by which the ball is played on to the putting-green.

Baff—To play a ball high into the air with a backward spin.

Baffing Spoon or Baffy—A short wooden club with a deeply lofted face, formerly used for playing approaches.

Bents—The long wiry grasses found on sea-shore links.

Bisque—A point taken by the receiver of odds at any period during the game.

Blind hole or Hazard—A Blind hole is one of which the putting-green is not visible to the player as he plays his shot. A Blind hazard is also a hazard which is hidden from his view.

Bogey—*See* p. 460. A method of scoring by holes against an imaginary opponent. The number of strokes which ought to be taken to each hole without serious mistakes.

Bone—The piece of horn, vulcanite, or other material let into the sole of wooden clubs to protect the lower edge of the face.

Borrow—To play a ball up a hill or slope, instead of straight across it, so that the slope will cause the ball to return towards the hole.

Brassy—A wooden club soled with brass.

Break Club—Any hard object lying near the ball, which might break the club in the act of striking.

Bulger—A convex-faced club.

Bunker—Originally a natural sand hole on the golf course. Now used also of artificially made hazards with built-up faces.

Bye—The hole or holes of the stipulated course that remain unplayed, after a match is finished.

Caddie—The boy or man who carries the players' clubs, tees his ball, and from whom he takes advice.

Carry—The distance which a ball travels from the club face to the spot where it first alights on the ground.

Cleek—An iron club with a long and narrow face—used for long shots through the green when a ball lies badly or when a wooden club would take it too far.

Club—Any legitimate implement used in striking the ball.

Course—The ground within the limits of which the game is played.

Cup—Any small indentation on the ground.

Cut—To put right-hand or backward spin on the ball so as to check its rolling forward after its fall.

Dead—A ball is said to lie dead when it lies so near the hole that the player is certain to hole it in the next stroke. A ball is also said to "fall dead" when it does not roll after reaching the ground.

Divot—The slice of turf cut out by the club in playing a stroke.

Dormy—A player is said to be dormy when he is as many holes up as there remain to be played, so that he cannot be beaten, and at the worst must halve the match.

Down—A player is said to be down when his opponent has won one or more holes than he has.

Draw—Synonymous with *Pull*.

Driver—The wooden club used for playing the longest strokes.

Duff—To hit the ground so far or so deep behind the ball that the ball only travels a short distance.

Face—The hitting surface of a club head.

Fog—Thick mossy grass.

Follow-through—The forward following of the club after hitting the ball.

Foozle—Any thoroughly bad stroke short of missing the ball altogether.

Fore!—The word shouted by the golfer when about to strike to give warning to parties in front.

Fore-caddie—The boy who precedes the players to show the line to the hole and to mark where the balls lie.

Full shot—A shot played with a full swing, and intended to travel as far as possible.

Gobble—A ball played too hard at the hole which nevertheless goes in.

Green—Synonymous with *Links* or *Course*; also used as a contraction for *putting-green*.

Grief—When a player has played his ball into a hazard of any description he is said to be in *grief*.

Grip—First, the upper part of the club shaft gripped by the player; second, the manner of gripping the club; third, a narrow ditch on the course used as a drain.

Gutty—A gutta-percha golf ball.

Half-one—A handicap of one stroke at every second hole.

Half-shot—A shot played with a half swing, and not intended to go as far as a full shot.

Halved—A halved hole is one to which both sides have taken the same number of strokes. A match is halved when no advantage has been gained on either side.

Hanging ball—A ball which lies on a downward slope in the direction in which it has to be driven.

Hazard—Any kind of difficulty, not being the ordinary grass of the course, into which a golf ball may get, with the exceptions mentioned in Rule 15.

Heel—First, the part of the face or hitting surface of the club head nearest the shaft; second, to hit the ball with the heel so as to cause it to fly to the right.

Hole—First, the entire space of ground between the teeing ground and the hole; second, the hole itself; third, to play the ball into the hole.

Hole High—A ball is said to be hole high when it is played on to the putting green from a distance.

Honour—The privilege of playing first from the tee.

Hook—To pull the ball round to the left with the toe of the club. Synonymous with *Pull* and *Draw*.

Horn—*See* BONE.

Hose—The hose or socket is that part of the head of an iron club into which the shaft is fitted.

Iron—A club with an iron head, used chiefly for approaching the hole and for lifting the ball over obstacles.

Jerk—To play a ball so that the club head strikes into the ground after hitting the ball.

Lie—The position of a ball anywhere on the course after it has been played.

Lift—To take a ball out of a hazard and drop it or tee it according to the Rules.

Like—To play the like at a given hole is to play a stroke which equalises the number played by the opposite side.

Links—The ground on which the game is played.

Loft—To raise a ball into the air.

Lofter—An iron club used to loft the ball.

Made—A player is said to be made when he is within a full shot of the green.

Mashie—An iron club which is shorter in the head than the iron.

Match play—The method of playing a game of golf by counting the number of holes gained or lost by each side.

Medal play—The method of playing a game of golf by counting the number of strokes taken to the round by each side.

Miss the globe—An expression used to describe the failure of a player to move the ball at all, after striking at it.

Neck—The curved part of the head next the shaft.

Niblick—An iron club with a round, small, and very heavy head, used when great force is necessary to extract a ball from its position.

Nose—The end of the head farthest from the shaft.

Odds—To play the odds, at a given hole, is to play one stroke more than the opposite side.

One off two, one off three, &c.—When the opposite side has played two or three strokes more, the other side plays "one off two" or "one off three" as the case may be.

Par—The par of a hole or round is the total number of strokes which should be required for them without mistakes.

Press—To put an extra amount of force into the swing.

Pull—Synonymous with *Draw* or *Hook*.

Putt—A stroke played with a putter on the putting-green with the object of playing the ball into the hole.

Putter—A club with either a wooden or metal head, used on the putting-green to play the ball into the hole.

Putty—A golf-ball made of composition.

Quarter shot—A shot played with a quarter swing from the wrists.

Round—A term used to describe a game over the whole course.

Run—First, the distance a ball travels after alighting on the ground; second, to make the ball travel along the ground instead of lofting it.

Scare—The part of the club where the head and shaft are joined.

Sclaff—To scrape the surface of the ground with the sole of the club head before striking the ball.

Scratch player—A good player, who receives neither handicap nor penalty.

Set—The players' equipment of clubs.

Shaft—The handle of the club.

Short Game—Approaching and putting.

Slice—To draw the face of the club across the ball so that it curves to the right.

Socket—*See* HOSE.

Sole—The flat part of the club-head which rests on the ground.

Spoon—A wooden club with a lofted face.

Spring—The elasticity of the club shaft.

Stance—The position of the player's feet in playing a stroke.

Steal—A long putt holed unexpectedly.

Stymie—A stymie occurs on the putting-green when one of the balls lies directly in front of the other on the line to the hole, and the balls are more than six inches apart.

Swing—The method in which the club is swung in the act of striking.

Swipe—A full shot.

Tee—The small elevation, usually a pinch of sand, from which the ball is struck for the first stroke to each hole.

Teeing-ground—The marked-out space from which the ball must be struck at the commencement of each hole.

Third—A handicap of one stroke given at every third hole.

Toe—Synonymous with *Nose*.

Top—To hit the ball above its centre.

Up—A player is said to be up when he has gained one or more holes upon his opponent.

Wrist Shot—A short stroke played with the wrists.

GARDEN G. SMITH.

RULES.

1. The Game of Golf is played by two or more sides, each playing its own ball. A side may consist of one or more persons.

2. The game consists in each side playing a ball from a tee into a hole by successive strokes, and the hole is won by the side holing its ball in the fewest strokes, except as otherwise provided for in the rules. If two sides hole out in the same number of strokes, the hole is halved.

3. The teeing ground shall be indicated by two marks placed in a line at right angles to the course, and the player shall not tee in front of, nor on either side of, these marks, nor more than two club lengths behind them. A ball played from outside the limits of the teeing ground, as thus defined, may be recalled by the opposite side.

The hole shall be 4¼ inches in diameter, and at least 4 inches deep.

4. The ball must be fairly struck at, and not pushed, scraped, or spooned, under penalty of the loss of the hole. Any movement of the club which is intended to strike the ball is a stroke.

5. The game commences by each side playing a ball from the first teeing ground. In a match with two or more on a side, the partners shall strike off alternately from the tees, and shall strike alternately during the play of the hole.

The players who are to strike against each other shall be named at starting, and shall continue in the same order during the match.

The player who shall play first on each side shall be named by his own side.

In case of failure to agree, it shall be settled by lot or toss which side shall have the option of leading.

6. If a player shall play when his partner should have done so, his side shall lose the hole, except in the case of the tee shot, when the stroke may be recalled at the option of the opponents.

7. The side winning a hole shall lead in starting for the next hole, and may recall the opponent's stroke should he play out of order. This privilege is called the "honour." On starting for a new match, the winner of the long match in the previous round is entitled to the "honour." Should the first match have been halved, the winner of the last hole gained is entitled to the "honour."

8. One round of the Links—generally 18 holes—is a match, unless otherwise agreed upon. The match is won by the side which gets more holes ahead than there remain holes to be played, or by the side winning the last hole when the match was all even at the second last

hole. If both sides have won the same number, it is a halved match.

9. After the balls are struck from the tee, the ball furthest from the hole to which the parties are playing shall be played first, except as otherwise provided for in the rules. Should the wrong side play first, the opponent may recall the stroke before his side has played.

10. Unless with the opponent's consent, a ball struck from the tee shall not be changed, touched, or moved before the hole is played out, under the penalty of one stroke, except as otherwise provided for in the rules.

11. In playing through the green, all *loose* impediments, within a club length of a ball which is not lying in or touching a hazard, may be removed, but loose impediments which are more than a club length from the ball shall not be removed under the penalty of one stroke.

12. Before striking at the ball, the player shall not move, bend, or break anything fixed or growing near the ball, except in the act of placing his feet on the ground for the purpose of addressing the ball, and in soling his club to address the ball, under the penalty of the loss of the hole, except as provided for in Rule 18.

13. A ball stuck fast in wet ground or sand may be taken out and replaced loosely in the hole which it has made.

14. When a ball lies in or touches a hazard, the club shall not touch the ground, nor shall anything be touched or moved before the player strikes at the ball, except that the player may place his feet firmly on the ground for the purpose of addressing the ball, under the penalty of the loss of the hole. But if in the backward or in the downward swing, any grass, bent, whin, or other growing substance, or the side of a bunker, a wall, paling, or other immovable obstacle be touched, no penalty shall be incurred.

15. A "hazard" shall be any bunker of whatever nature:—water, sand, loose earth, mole hills, paths, roads or railways, whins, bushes, rushes, rabbit scrapes, fences, ditches, or anything which is not the ordinary green of the course, except sand blown on to the grass by wind, or sprinkled on grass for the preservation of the Links, or snow or ice, or bare patches on the course.

16. A player or a player's caddie shall not press down or remove any irregularities of surface near the ball, except at the teeing ground, under the penalty of the loss of the hole.

17. If any vessel, wheelbarrow, tool, roller, grass-cutter, box, or other similar obstruction has been placed upon the course, such obstruction may be removed. A ball lying on or touching such obstruction, or on clothes, or nets, or on ground under repair or temporarily covered up or opened, may be lifted and dropped at the nearest point of the course, but a ball lifted in a hazard shall be dropped in the hazard. A ball lying in a golf hole or flag hole may be lifted and dropped not more than a club length behind such hole.

18. When a ball is completely covered with fog, bent, whins, &c., only so much thereof shall be set aside as that the player shall have a view of his ball before he plays, whether in a line with the hole or otherwise.

19. When a ball is to be dropped, the player shall drop it. He shall front the hole, stand erect behind the hazard, keep the spot from which the ball was lifted (or in the case of running water, the spot at which it entered) in a line between him and the hole, and drop the ball behind him from his head, standing as far behind the hazard as he may please.

20. When the balls in play lie within six inches of each other—measured from their nearest points—the ball nearer the hole shall be lifted until the other is played, and shall then be replaced as nearly as possible in its original position. Should the ball further from the hole be accidentally moved in so doing, it shall be replaced. Should the lie of the lifted ball be altered by the opponent in playing, it may be placed in a lie near to, and as nearly as possible similar to, that from which it was lifted.

21. If the ball lie or be lost in water, the player may drop a ball, under the penalty of one stroke.

22. Whatever happens by accident to a ball *in motion*, such as its being deflected or stopped by any agency outside the match, or by the fore caddie, is a "rub of the green," and the ball shall be played from where it lies. Should a ball lodge in anything moving, such ball, or, if it cannot be recovered, another ball shall be dropped as nearly as possible at the spot where the object was when the ball lodged in it. But if a ball *at rest* be displaced by any agency outside the match, the player shall drop it or another ball as nearly as possible at the spot where it lay. On the Putting Green the ball may be replaced by hand.

23. If the player's ball strike, or be accidentally moved by an opponent or an opponent's caddie or clubs, the opponent loses the hole.

24. If the player's ball strike, or be stopped by himself or his partner, or either of their caddies or clubs, or if, while in the act of playing, the player strike the ball twice, his side loses the hole.

25. If the player when not making a stroke, or his partner or either of their caddies touch their side's ball, except at the tee, so as to move it, or by touching anything cause it to move, the penalty is one stroke.

26. A ball is considered to have been moved if it leave its original position in the least degree and stop in another; but if a player touches his ball and thereby cause it to oscillate, without causing it to leave its original position, it is not moved in the sense of Rule 25.

27. A player's side loses a stroke if he play the opponent's ball, unless (1) the opponent then play the player's ball, whereby the penalty is cancelled, and the hole must be played out with the balls thus exchanged, or (2) the mistake occur through wrong information given by the opponent, in which case the mistake, if discovered before the opponent has played, must be rectified by placing a ball as nearly as possible where the opponent's ball lay.

If it be discovered before either side has struck off at the tee that one side has played out the previous hole with the ball of a party not engaged in the match, that side loses that hole.

28. If a ball be lost, the player's side loses the hole. A ball shall be held as lost if it be not found within five minutes after the search is begun.

29. A ball must be played wherever it lies, or the hole be given up, except as otherwise provided for in the Rules.

30. The term "putting green" shall mean the ground within 20 yards of the hole, excepting hazards.

31. All loose impediments may be removed from the putting green, except the opponent's ball when at a greater distance from the player's than six inches.

32. In a match of three or more sides, a ball in any degree lying between the player and the hole must be lifted, or, if on the putting green, holed out.

33. When the ball is on the putting green, no mark shall be placed, nor line drawn as a guide. The line to the hole may be pointed out, but the person doing so may not touch the ground with the hand or club.

The player may have his own or his partner's caddie to stand at the hole, but none of the players or their caddies may move so as to shield the ball from, or expose it to, the wind.

The penalty for any breach of this rule is the loss of the hole.

34. The player or his caddie may remove (but not press down) sand, earth, worm casts or snow lying around the hole or on the line of his put. This shall be done by brushing lightly with the hand only across the put and not along it. Dung may be removed to a side by an iron club, but the club must not be laid with more than its own weight upon the ground. The putting line must not be touched by club, hand, or foot, except as above authorised, or immediately in front of the ball in the act of addressing it, under the penalty of the loss of the hole.

35. Either side is entitled to have the flag-stick removed when approaching the hole. If the ball rest against the flag-stick when in the hole, the player shall be entitled to remove the stick, and, if the ball fall in, it shall be considered as holed out in the previous stroke.

36. A player shall not play until the opponent's ball shall have ceased to roll, under the penalty of one stroke. Should the player's ball knock in the opponent's ball, the latter shall be counted as holed out in the previous stroke. If, in playing, the player's ball displace the opponent's ball, the opponent shall have the option of replacing it.

37. A player shall not ask for advice, nor be knowingly advised about the game by word, look, or gesture from any one except his own caddie, or his partner or partner's caddie, under the penalty of the loss of the hole.

38. If a ball split into separate pieces, another ball may be put down where the largest portion lies, or if two pieces are apparently of equal size, it may be put where either piece lies, at the option of the player. If a ball crack or become unplayable, the player may change it, on intimating to his opponent his intention to do so.

39. A penalty stroke shall not be counted the stroke of a player, and shall not affect the rotation of play.

40. Should any dispute arise on any point, the players have the right of determining the party or parties to whom the dispute shall be referred; but should they not agree, either party may refer it to the Green Committee of the green where the dispute occurs, and their decision shall be final. Should the dispute not be covered by the Rules of Golf, the arbiters must decide it by equity.

Special Rules for Medal Play.

1. In Club competitions, the competitor doing the stipulated course in fewest strokes shall be the winner.

2. If the lowest score be made by two or more competitors, the ties shall be decided by another round to be played either on the same or on any other day as the Captain, or, in his absence, the Secretary shall direct.

3. New holes shall be made for the Medal Round, and thereafter no member shall play any stroke on a putting green before competing.

4. The scores shall be kept by a special marker, or by the competitors noting each other's scores. The scores marked shall be checked at the finish of each hole. On completion of the course, the score of the player shall be signed by the person keeping the score and handed to the Secretary.

5. If a ball be lost, the player shall return as nearly as possible to the spot where the ball was struck, tee another ball, and lose a stroke. If the lost ball be found before he has struck the other ball, the first shall continue in play.

6. If the player's ball strike himself, or his clubs or caddie, or if, in the act of playing, the player strike the ball twice, the penalty shall be one stroke.

7. If a competitor's ball strike the other player, or his clubs or caddie, it is a "rub of the green," and the ball shall be played from where it lies.

8. A ball may, under a penalty of two strokes, be lifted out of a difficulty of any description, and be teed behind same.

9. All balls shall be holed out, and when play is on the putting green, the flag shall be removed, and the competitor whose ball is nearest the hole shall have the option of holing out first, or of lifting his ball, if it be in such a position that it might, if left, give an advantage to the other competitor. Throughout the green a competitor can have the other competitor's ball lifted, if he find that it interferes with his stroke.

10. A competitor may not play with a professional, and he may not receive advice from any one but his caddie.

A fore caddie may be employed.

11. Competitors may not discontinue play because of bad weather.

12. The penalty for a breach of any rule shall be disqualification.

13. Any dispute regarding the play shall be determined by the Green Committee.

14. The ordinary Rules of Golf, so far as they are not at variance with these special rules, shall apply to medal play.

GOORAL OR **GORAL** (*Nemorhædus goral*) —By naturalists the Gooral is said to be one of the connecting links between the goat and antelope tribes. A full-grown buck stands from 27 inches to 28 inches on sturdy, goat-like limbs. The colour of its short, rough pile is a dark brownish-grey, with a distinct white patch on the throat. Both sexes carry short, black horns; those of a good buck are about 7 inches long, with a slight curve backwards, and nearly 4 inches base circumference. They are rather irregularly annulated up to about half their

Gooral (Doe).

length. The doe's horns are thinner, more indistinctly annulated, and usually shorter.

The gooral always affects craggy and precipitous heights, which may or may not be forest-clad. During the day it usually lies up in some secluded nook, but it feeds on steep grassy slopes among the crags until late in the morning, and again towards evening. The writer has shot gooral as low, if not lower, than 4,000 feet in the outer ranges, including the higher crests of the Sewaliks; and as high as about 10,000 feet in the higher ones, not very far below the perpetual snow-line, and on the same ground with the Tahr (*Hemitragus jemlaicus*). It is more or less common all along the Himalayan ranges from Cashmere to Nepal.

Its powers of sight, scent, and hearing are acute, and its disposition suspicious, wary, and timid. Yet, after being disturbed, or even shot at, and missed, it will frequently perch itself on some prominent crag, emitting at short regular

intervals its note of alarm, which may be compared to a word spelt "tschick"—pronounced short and sharp. It usually returns, in course of

GOORAL (BUCK).

Av. height at shoulder, 27½ in. Av. horn meas. 7 in.; Max. horn meas. 8½ in.

time, to its favourite haunts, after being driven from them by being fired at or even wounded.

One November morning the writer wounded one of a small band of gooral. It went off with its companions, but the telescope showed that a fore-leg was broken at the knee. In November of the following year a similar band of gooral was found on almost exactly the same spot and one was killed out of it. This animal had a stiff knee-joint, evidently the work of a bullet, but the bones had reunited in a long lump, and the writer had no doubt it was the identical animal he had wounded there the previous year.

As regards its characteristics, the gooral may be said to take the same place in the Himalayas as the chamois does in the Alps. And gooral-hunting on the precipitous and craggy heights of the middle and outer ranges, where there is enough hard climbing to give it zest, is most charming sport. Moreover, the sportsman has seldom to score the blank days which are so common when after grander game on the higher ranges and in Tibet.

A double express rifle of ·450 bore is about the best for gooral, as well as for all other Himalayan game animals.

A. F. MACKENZIE.

GOOSE, WILD.—Six species of wild geese are more or less commonly met with in the British Islands. These are the Grey Lag, the Bean, the Pink-footed, the White-fronted, the Bernicle, and the Brent goose. In addition to the half-dozen enumerated, there are some others which may be looked upon as rare or occasional visitors, and in this class may be placed the Red-breasted and the Snow goose; whilst two sub-species, the Lesser White-fronted and the White-bellied form of the Brent goose, may also be regarded as of this class. Others might perhaps be deemed to have the right to inclusion in the list of British geese, but as some of them—notably the Canadian and Egyptian geese—are now kept in a state of semi-domestication in various parts of the country, the occurrence of really wild visitors is always difficult to determine.

The Grey Lag Goose (*Anser cinereus*) is our only resident wild goose. It breeds in the north of Scotland, in the counties of Ross, Sutherland and Caithness, but is, notwithstanding, the scarcest of our wild geese. This perhaps may be partly accounted for by the fact that it prefers a more temperate climate than the rest of the British geese, its breeding haunts and winter quarters being generally situated further to the south than are theirs.

Professor Newton divides the grey geese into two groups: in the first the "nail" at the tip of the bill is white, or of a very pale flesh colour, and in the second this nail is black. To the white-nailed division belong the Grey Lag and the White-fronted goose, and to the black-nailed group the Bean and Pink-footed goose.

The bill of the Grey Lag has a white tip or nail, the other portions, and also the legs, being pale pink or flesh-coloured. A light ashen coloured patch of feathers on the shoulder is a

GREY LAG GOOSE.

distinguishing feature of the plumage, and by this means alone the bird may be recognised at some little distance. The breast of this bird, usually of a plain grey colour, has sometimes dark feathers, as the White-fronted goose. The Grey Lag measures some thirty-three to thirty-five inches from tip of bill to end of tail, and weighs up to about 10 lbs.

The White-fronted Goose (*Anser albifrons*) comes to us in winter, but is not perhaps quite so regular in its visits as the other grey geese. In both appearance and general characteristics this goose is more nearly allied to the Grey Lag than either the Bean or the Pink-footed goose. It is generally to be found in the vicinity of marshes. The breast in adult birds of this species is barred with dark feathers, and the bird takes its name from the white frontal margin of feathers at the base of the bill. The nail of the bill is white, the rest being orange, as also are the legs and feet. The White-fronted goose is the smallest of our grey geese; it measures only 27 inches or so in length, and weighs about $5\frac{8}{4}$ lbs. The Rev. H. A. Macpherson says the heaviest he ever weighed scaled $6\frac{1}{2}$ lbs., and this is the heaviest weight that I have seen recorded for this species.

The Lesser White-fronted Goose (*Anser erythropus*) is a diminutive form of the White-fronted goose. It is an extremely rare straggler to the British Islands, and, so far as I am aware, the only authenticated example of a British-killed specimen is one shot on the coast of Northumberland some few years ago by the late Mr. Alfred C. Chapman.

The Bean Goose (*Anser segetum*), another winter visitor, is a hardier species than the Grey Lag, its breeding haunts, and also its general winter habitat, being much farther to the North. In my experience the Bean goose generally prefers the marshland grasses to the uplands, and does not take such extended inland flights as its greyer relative the Pink-footed goose. In England it may usually be found grazing upon the young clovers and growing corn not far away from the coast line. In Ireland it is the commonest grey goose, and this fact goes to prove that it is more a marsh-feeding species than the Pink-footed goose. We have been frequently told that this bird congregates in vast numbers to feed upon the scattered grain left in the fields far inland. This, however, has been proved to be a mistake in one or two instances, and from personal observation of the habits of the Bean and the Pink-footed goose, extending over a number of years, I am inclined to think that it is a case of mis-identification in some other instances also. Seven and a half to 8 lbs. is a good weight for a Bean goose, but in open winters, when food is plentiful, they have been killed weighing 9 lbs. and upwards. Length about 33 inches. The nail and basal portion of the bill are black, the rest orange, as also are the legs and feet.

The Pink-footed Goose (*Anser brachyrhynchus*), as its name signifies, has a bill somewhat shorter than the rest of the grey geese. The nail of the bill in this goose is black, the middle portion as well as the legs and feet being pink—vermilion-pink, one writer has described it. Occasionally adult birds are found to have a white band of feathers at the base of the bill, similar to, although not generally quite so deep as, that on *A. albifrons*. The light shoulder patch is present in old birds, but it is not so

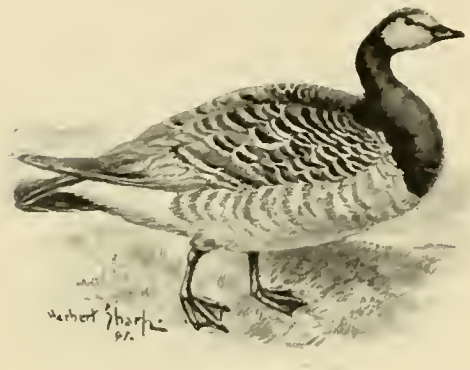
PINK-FOOTED GOOSE.

pronounced as in the Grey Lag. Of all our migratory birds, summer or winter, none are more regular in the date of their arrival than the Pink-footed geese. In East Yorkshire I have noticed that they arrive on or about September 25th, with unvarying punctuality. By that date the harvest is usually completed, and the geese visit the stubbles day by day to feed upon the scattered corn. Pink-footed geese are remarkably local in their distribution, confining their visits to certain circumscribed areas where peaceable possession of the food they most desire is to be obtained. Barley is their favourite grain, and so long as this is obtainable they will not leave the stubbles; on its exhaustion they turn to the young clover and the tender blades of the autumn sown wheat, with marsh or other grasses as a change. Pink-footed geese usually weigh about $1\frac{1}{2}$ lbs. less than Bean geese, and they measure 30 inches from bill to tail.

The Snow Goose (*Anser hyperboreus*) is a rare visitor to this country. As this goose is more numerous in North America than elsewhere, it is not singular that it should have been observed more frequently in Ireland than in Great Britain. It is not mentioned as having occurred in England until the hard weather of January 1891, when, on the fifteenth of that month, I saw three Snow geese in East Yorkshire, the incident being recorded in the *Field* newspaper at the time. These birds appeared very large and swan-like, and it is possible they might be referred to *A. hyperboreus*, the larger form of Snow goose, instead of to *Anser albatus*, the lesser Snow goose. In the same month, the Rev. H. A. Macpherson saw four Snow geese in Cumberland. The plumage of this

bird, white with black quill feathers, is sufficiently conspicuous to attract attention to it wherever it goes. It may, therefore, be taken for granted that it occurs very sparingly in this country.

The Bernicle Goose (*Bernicla leucopsis*) visits this country in considerable numbers, but it evinces a strong partiality for certain districts,



BERNICLE GOOSE.

notably the west coast of Scotland and some parts of Ireland, and seldom strays far from those haunts, save under exceptional circumstances. With respect to habit, the Bernicle goose may be said to form a connecting link between the grey geese and the Brent geese, for it is seldom to be found far away from salt water, although not so strictly marine in its tastes as the black goose. The Rev. H. A. Macpherson has given an interesting description of the habits of Bernicle geese on the Cumberland coast in his *Fauna of Lakeland*. This goose weighs about $5\frac{1}{2}$ lbs. and measures 25 inches in total length.

The Brent Goose (*Bernicla brenta*) is best of all the geese from both the gastronomist's and

BRENT GOOSE.

the punt-gunner's points of view. It is very rarely seen inland, being strictly marine in its tastes; but in extremely rough and snowy weather these birds occasionally get blown out of their course. Brent geese commence to arrive about the end of September or beginning of October in the north of Scotland, but the majority of the black geese do not reach these shores until November. They depart for circumpolar breeding haunts about the end of March or beginning of April. A white-bellied form of the Brent goose (*Bernicla brenta glaucogaster*) is sometimes, though rarely, met with. Thousands of Brent geese are to be found in winter in various suitable localities around our coasts. Their numbers are invariably considerably augmented during any protracted spell of hard weather by fresh arrivals of geese from Northern Europe. The principal food of the Brent goose whilst here is the grass wrack (*Zostera marina*), which grows upon the mudbanks in certain estuaries and along the open coast. When the tide leaves these mudbanks the geese alight to feed upon this weed, and, where they are not subjected to much persecution at the hands of punt-gunners, the operation may be continued upon the rising of the tide until the long waving blades of grass can be no longer reached. Even then the meal is not always at an end, for the geese, when on the muds or shallows, instinctively pull up much more of the weed than can be devoured at the time, and this, floating away on the tide, provides food for them at those times when the *zostera* beds are deeply submerged. The Brent measures 22 in. to 25 in. in length and weighs from $3\frac{1}{2}$ to $4\frac{1}{2}$ lbs.

The Red-breasted Goose (*Bernicla ruficollis*) has only been obtained a dozen times in the British Islands. The plumage of adult birds is strikingly handsome, black, white, and rich chestnut predominating. According to Seebohm the Red-breasted goose, so far as is known, is confined during the breeding season to the tundras in some parts of Northern Siberia. This goose would seem to be equally exclusive in its choice of winter quarters, for up to the present it is known to spend the winter only on the large Asiatic inland sea, the Caspian. Length about 22 inches.

GOOSE-SHOOTING—Wild-goose chasing has sometimes been mentioned slightingly. This perhaps springs as much from ignorance as from want of appreciation, for few true sportsmen who have once indulged to the full in the sport of wild-goose shooting will vote it either slow or void of interest. One reason why this sport is so inspiriting arises from the fact that it has an accompaniment seldom found in other branches of sport in which the gun has a part. This is the wild music of the quarry. The clamour of a large "gaggle" of geese, heard from a distance, has been likened by some old writers to the sound emitted by a pack of hounds in full cry. Certainly, the ringing chorus of a good-sized skein of Pink-footed geese,

Drawn by J. Audubon.

Swan Electric Engraving.

Unapproachable Geese

uttered as they sweep along through the air, strikes the ear quite as pleasantly, and is a sound just as exhilarating to the senses of the wild-fowler and of all who love wild nature, as hound-music to the fox-hunter.

In order the more readily to discuss the question of wild-goose shooting, it will be as well to place the six commoner species of British geese in two divisions, the grey and the black. The first division includes the Grey Lag, Bean, Pink-footed and White-fronted, and these in a general way may be looked upon as inland-feeders; the second division, Bernicle and Brent geese, are coast-feeders.

The grey geese usually rest at night upon mud and sandbanks, or higher saltings in the wider estuaries or along the open coast, or upon islands on the larger inland sheets of water, as well as in secluded spots upon the moors. From thence, in open weather, they take daily flights of greater or less extent to feed inland. Of all the grey geese the Pink-footed goose is perhaps the greatest lover of corn, *i.e.*, corn in the ear, and to obtain this particular food these birds will fly many miles out and home, morning and evening. The Grey Lag and the Bean goose prefer the vicinity of the coast, and the White-fronted goose is even more particularly a marsh-haunting bird. The Bernicle, also, has a preference for the marshes, spending his time chiefly by the sea. Brent geese are essentially sea-going fowl; seldom, indeed, are they to be found out of sight of salt water. The favourite food of Brent geese is the sea-grass (*Zostera marina*), and where this is abundant, and its quiet enjoyment may be obtained, on our eastern coasts at all events, the black geese are usually to be found.

Judged by the nature of their surroundings and habits, it seems but natural that a considerable percentage of the grey geese killed in this country should fall to the shoulder gun. With Brent geese, however, it is different, for, as these fowl must in a general way be approached by water, it happens that by far the greater number are killed by the punt-gun. Where they are much followed, the Brent geese will not be found to incur many risks by moving over the saltings, their farthest landward flights seldom extending beyond the mud flats uncovered at low water. By digging a hole, or sinking a cask well out upon the mud flats, the shoulder-gunner may have some sport in stormy weather or, what is equally good, in a thick fog. When one is properly equipped in long wading boots and suitable clothing, the discomforts attending this method of shooting are not great, and, certainly, the exciting nature of the pursuit well repays the fowler for any extra trouble in suitably fixing his position.

In **punting** to geese, the gunner proceeds in either a single or a double-handed punt. For this purpose the latter is, all things considered, the best; as one then embarks in a roomier and more seaworthy boat. This is of first importance on the open coast, where a heavy sea may spring up quickly. In the more sheltered situations the narrower single-handed punt answers well, and is better to get about in. It is usually extremely difficult to approach within gun-shot of Brent geese in mild weather, and in this pursuit, as in nearly all shooting with the punt gun, success is best attained during prolonged frosts.

Grey geese will seldom allow a punt to approach them when on the water in the daytime. Seasoned punt-gunners seldom trouble after them in daylight, well knowing such pursuit to be futile. In the grey dawn or evening twilight they may be occasionally outwitted by stealing upon them as they rest on the sand or mudbanks of their night haunt. But the heaviest shots at grey geese are usually made on dark nights, when carefully-laid plans and a well-timed shot into the dense black mass of geese, as they rise in the dark with a sound like thunder, will often fill the punt with dead birds. On these occasions a goodly proportion of the birds falling to the shot cannot be secured in the gloom, and they should be searched for in likely situations, according to set of tide and direction of wind, at daybreak the following morning. This method of shooting more or less by sound—for very little can be discerned in the darkness necessary to secure a close approach to these wary birds—is, however, usually pursued by gunners who shoot for a living; the amateur prefers to note the result of each shot, and the shooting by guesswork in the dark certainly robs the sport of half its pleasure.

For full particulars as to dimensions and style of punts, double and single-handed, I may refer my readers to Col. Hawker's well-known work, and also to some recently-published works on wild-fowling named below. This remark applies also to punt-guns, of which, both muzzle and breech-loading, there are many varieties, as well as several ingenious methods of fixing them up so as to ease the gunner of all recoil on firing.

In districts much frequented by grey geese excellent sport may at times be obtained with the shoulder gun. By waylaying them as they take morning and evening flights to and from the feeding ground, some geese may now and again be killed, particularly when a head wind keeps them near to the ground. In still weather they usually fly at a good altitude, taking care to keep well up out of gunshot. Another and more successful method of obtaining sport with grey geese is to conceal one's self on the night haunt of the game. When too often followed, this will, of course, cause the geese to seek quiet in other quarters, but an occasional night spent with the geese in this way is often prolific of sport of a most exciting character. Now and

again a skilful stalker may approach within shot of grey geese as they feed on the fields; but as the stalking of wild geese needs a combination of favouring circumstances not always obtainable, it cannot be relied upon as a means whereby sport may be obtained.

Driving, all things considered, is the most successful plan to adopt when following grey geese inland. Properly followed this is most exciting sport, for both gunner and driver will, perforce, have to undertake many long and arduous stalks. Geese, like other fowl, fly against wind on rising; and, knowing this, the sportsman endeavours to conceal himself within shot of the line they will take on being disturbed by the driver. As this place of concealment must be to windward of the geese, it follows that the utmost caution must be observed in securing such positions. The approach must be carefully planned, as must that of the driver, and the planning and execution of these strategical movements is not by any means the least exciting part of the business. An Irish servant I once had proved himself an invaluable aid as a driver. He entered into the sport heart and soul, and enjoyed the successes quite as much as I did. I shall never forget his delight when on one occasion he very skilfully drove a nice gaggle of Pink-footed geese past my stand, and five were secured as the result of a shot from a big 4-bore.

Guns and Ammunition—It is sometimes found that heavy shoulder guns of large calibre are absolutely essential to success in goose-shooting. In a wild, open country, geese are not easily approached, and in such situation a powerful 8- or 4-bore gun will prove most effective. In these guns weight, to a certain extent, means power; and as they have not to be carried far as a rule, a single 4-bore for goose-shooting may well weigh as much as 18 lb. From a fully choked gun of this weight 3½ oz. of large shot will be delivered with deadly force at 80 to 100 yards, up to which distance geese may regularly be killed. If an 8-bore is chosen, this may be a double-barrel, weighing 15 lbs. or so. From a gun of this weight 2½ oz. of large shot may be fired from each barrel with comfort. The large shot known as A.A., counting 40 pellets to the ounce, is a suitable size to use for goose-shooting, at ranges of from 80 to 100 yards. At shorter distances B.B., of 58 pellets to the ounce, will answer. Many people pin their faith to the use of coarse-grained black powder in heavy shoulder guns, but in suitable cartridge cases the nitro-powders, Schultze, E.C., and Amberite, answer admirably. They are not nearly so noisy as black powder, and the report of the heavy gun has a much less disturbing effect upon the fowl. A stout double 12-bore is a very handy weapon to use in some situations, particularly when visiting the night haunts of the geese. A gun of this sort, weighing 7½ to 8 lbs., will carry up to 1½ oz. of No. 1 or B.B. shot, and may be used with deadly effect upon geese at fifty yards.

Clothing is a matter of first importance, for to the improperly-clad sportsman the pursuit lacks half its pleasure, to say nothing of the needless risks to health incurred by reason of a faulty system. In the sport of wildfowl shooting much waiting about in the cold is often necessary. We may take a hint from nature in deciding that for warmth, health, and comfort, nothing beats pure wool for wear next the skin. Let the foundation at all events be wool; and if the weather is very cold, and two or three layers of clothing are worn, the lower strata should be of wool also. The outer covering, too, may be of wool in fine weather, but for wet work gabardine is excellent wear, and, being very light, does not impede one's movements so much as a thicker material. This is a matter of much importance where a gun has to be handled. In bitterly cold weather, particularly when icy winds pierce one to the marrow, a leather jacket may be worn as an overall with an infinite degree of comfort. On other occasions the latter form of clothing is superfluous, and perhaps also unhealthy. Ordinary shooting boots may be worn on most occasions when following geese inland. But proper wildfowling rig must be donned for shooting upon the mud flats. In such situations long leather wading boots may be worn two sizes too large, to enable an extra pair or two of thick woollen stockings to be put on, without which the gunner would suffer much from cold feet.

Bibliography—Those who desire to learn more as to the habits and general characteristics of the geese may turn to one or other of the following works: *A History of British Birds*, Henry Seebohm (Porter); Yarrell's *British Birds*, 4th edition; *A Manual of British Birds*, Howard Saunders; *A Hand-book of British Birds*, J. E. Harting; *A Dictionary of Birds*, Professor A. Newton.

For more complete directions as to the sport of wild-goose shooting much information will be gathered from the following: *Instructions to Young Sportsmen*, Col. Hawker, several editions of which were published by Messrs. Longman fifty and more years ago, but much of which is still applicable. *The Wildfowler*, by H. C. Folkard (Longmans), a work that is quite unsurpassed as a history of wildfowling; *The Fowler in Ireland*, by Sir R. Payne-Gallwey, Bart. (Gurney and Jackson), an excellent work; in his *Letters to Young Shooters* the same author, in the section on *Wildfowling*, imparts valuable instruction. Then we have *The Art of Wildfowling*, by Mr. Abel Chapman, a thoroughly reliable work (Horace Cox), and, by the present writer, *Practical Wildfowling* (L. Upcott Gill).

HENRY SHARP.

GRASMERE SPORTS—The origin of these now famous sports is the subject of keen discussion amongst men who were not young in the early fifties of the now decaying century. Whether, as they now exist, the Sports are the direct lineal descendants of the old Fair-day

Athletic gatherings which were held in Grasmere after the sheep and cattle bargains had been concluded, or are a survival of the village Rush-bearing Competitions, or whether they are the growth and outcome of Sports initiated in the year 1852 by certain gentlemen who, at that time, were prominent sportsmen in the district, is an extremely difficult question to decide. That Grasmere has long been the home of the famous Westmorland and Cumberland style of wrestling is certain, and it is primarily to wrestling that the sports owe the position they hold to-day in the Athletic world.

WRESTLING.

It is certain, from documentary evidence which the writer has seen, that, in 1852, several of the more prominent sporting gentlemen of the district (of whom now only a few survive) formed themselves into a committee to keep the wrestling fame of Grasmere alive, and from that date up to the present—with the exception of the year of the Crimean war, when, owing to the military demands of the day, the chief supporters were called from home and no sports were held—the Grasmere Gathering has a practically unbroken record. In 1852 the Sports occupied two days and included steeple-chasing; now the fixture is for one day only and the horse element has long been eliminated from the programme. The events during the last thirty years have comprised Heavy Weight and Light Weight Wrestling, Guides' Race, Pole and High Leaping, and a Hound Trail.

Wrestling is the *pièce de résistance* of the day. The light-weight Competition is restricted to men under 11 stone 3 lbs., whilst the heavy-weight is open to the world.

The present heavy-weight champion is George Steadman, of Whitehaven. Steadman is now 51 years of age, but, when he carried away the belt from the Grasmere ring in 1896 for the thirteenth time, he was as good, both in attack and defence, as when he first claimed the girdle in 1872. To give some slight idea of what manner of man this champion is, the following facts concerning him may be interesting. He made his first public appearance as a wrestler in 1862; he can wrestle in any and every recognised style, and has met and thrown the thin French Champion Le Boeuf, at Lillie Bridge, in the Frenchman's own style, and at

WRESTLING.

the Alexandra Palace, he served Boulanger in the same way; whilst in three successive years, 1880, 1881, and 1882, he carried away Sir John Astley's belt from Lillie Bridge. He measures 47 inches round the chest, stands 5 feet 4½ inches in height, and draws the scales at 18 stone 3 lbs. Without a doubt, Steadman is a worthy upholder of the best traditions of Westmorland and Cumberland wrestling, and is an honourable successor to such men as Noble Ewbank, Adam Walker, of Troutbeck, and Tom Longmire, of Windermere.

The **Guides' Race** is one of the most important and attractive events in the Grasmere programme, and certainly it is one of the severest struggles to which an athlete could be put. The race, an open one, is from a field in the valley round a flag-post on one of the peaks of Sölva How, and down into the valley again. There is a level field to cross at the boulder that has been disturbed from its balance and rolls and bounds along, gaining impetus as it proceeds. A few years ago, a certain Mungo Park won the race and, in his downward course, he came across a little precipice, but, nothing daunted, he made the jump which was, then and there, officially measured as 22 feet. The record time for the race was broken in 1896, when T. Conchie, of Shap, ran it in 14 min. 26 4-5 sec. He is the best man who hitherto has run the race, and his uphill work especially is admirable. He is 23 years of age, weighs 11½ stone, and stands 5 feet 10½ inches in height. He earns his livelihood as a labourer, at the famous Shap granite works, and his training is of the simplest.

When the guides have come safely home, the **Hound Trail** is started. It is a pretty sight to watch the dozen or fifteen dogs as they are held in their leashes, giving loud mouth and awaiting

GUIDES' RACE.

start, preceded by a high stone wall, and afterwards one long, steep, craggy climb to the summit, a height of 1100 feet from the valley, and 1300 feet above sea-level. The ground is either of the very roughest, or, what is almost worse, of slippery bracken-grown screes, and the stiffness of the race may be imagined. The average number of competitors for this race is fifteen, and the sight of these men leaping over the first stone wall, galloping across the level field, winding their devious ways through the single pine wood, again appearing in the open and racing over moor and fell, crag and torrent, until the leader rounds the post and hands his ticket to the official stationed there, is an exciting and picturesque one. The race down is almost incredible, for the speed at which the men descend is terrific, and, oftener than not, the race is won on the homeward journey. The runners appear to be driven down by some unseen irresistible force: to the spectators, in the valley below, each man resembles a huge impatiently the signal to go. The trail is laid by a man running over the course, and dragging behind him a rag steeped in a mixture of train oil and oil of aniseed. There are several trails in Westmorland, but the Grasmere course is admittedly the roughest and most testing. The trail starts from the Sports' field, runs along the breast of Sölva How by Red Bank, along Loughrigg Terrace, crosses by White Moss along by Forrest Side, over the old turnpike road above the Travellers' Rest, along the breast of Helm Crag, across by Easedale Head, along the opposite breast, and so into the field again by Allan Bank, a circuit covering something between nine and ten miles of ground. The course varies every year, though not to any extent, either in distance or direction, and only sufficiently to prevent hounds from being previously trained to run the special trail selected for the day. The circuit indicated above embraces the whole village of Grasmere, and, from first to last, the ground lies over the hills and moun-

tains, and the going throughout is as rough as loose stones and rocky boulders can make it. Obstacles in the shape of high stone walls, wooden palings, and mountain streams intersect the trail at every point. So soon as the trailer has come in, the hounds are loosed, and, for the next half hour, the fleeting specks are watched through the field glasses, a pack in full view of game which they are never fated to kill, and yet as keen as though the brush was whisking their tongues. As mile is added to mile, the pack begins to scatter and the line grows thinner. Sometimes the leader loses his place by reason of a loose stone on the top of a difficult wall toppling over, sometimes a stream offers an irresistible temptation for delay, whilst a favourite has been known to lose the run through waiting for a companion in distress behind him. The astonishing pace is always maintained by the majority, and often it is a nose and nose race home between the first couple, and not until a certain line has been passed, and the number appears on the board, and the band strikes up the old Cumberland air, "D'ye ken, John Peel?" does even the owner of the gallant little animal know the winner. The official time for the race in 1896, won by Mr. Rayner's "Ruler," was 30 minutes 28 seconds. The dogs are clean, thoroughbred foxhounds, and are most carefully trained for months before the sports. It is an exception for them to belong to a hunting pack, though "Wyndham," one of the best hounds that ever ran a trail, was also one of the hardest working members of the Rev. E. M. Reynolds's Coniston pack. Every precaution is taken as to what the hound is fed upon, and one of the most successful trainers, John Lancaster, for a fortnight before a trail, feeds his dogs upon a diet consisting of the white of two hard-boiled eggs finely pulped together with two raw eggs, mixed with a quantity of bread, specially made with eggs, without yeast or salt, but with plenty of sugar-candy and fruits; a certain quantity of good sherry is added to this, which, together with half a pound of a roast leg of mutton, is given to each dog twice a day. Lancaster has also a special mixture of his own preparation which he gives to the hound the moment before running, the object of which is to keep the animal cool and so minimise the chance of his staying to drink at cooling streams when heated in the chase. Hound-trailing has become a fashionable form of sport in Westmorland, and many gentlemen own, train, and enter their own hounds at Grasmere, and a good prize-winning trailer has become a valuable possession.

TRAIL RACE.

After the hound-trail follows the pole and high leaping, and these events, always capitally contested, bring the programme to a close.

The Grasmere Sports are held at Pavement End, on the Thursday nearest to the 21st of August. Every event is open, and the best talent is year by year seen here. With the single exception which has been mentioned, the programme is identical with what it was in 1852, and it is to be hoped that, so long as the Sports continue to be held, it will remain what it is to-day. Round after round of wrestling may possibly prove, towards the end of the day, monotonous to the uninitiated, but it is the great feature of the meeting, and of the £250 distributed in prizes, no less than £120 is devoted to this competition. Wrestling is the form of sport indigenous to the soil, and has played its

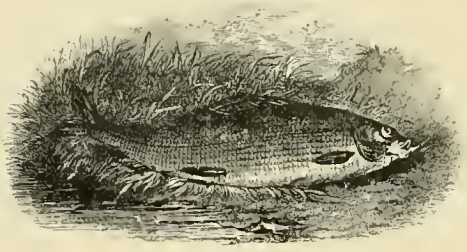
part in forming the splendid physique of Westmorland and Cumberland men.

Very pleasant features of the gathering are the large number of downright Cumberland and Westmorland people who annually attend, the entire absence of rowdyism, and the total prohibition of betting.

J. C. SHEPHERD.

GRAYLING—(*Salmo thymallus*, Lin.; *Thymallus vulgaris*, Cuvier, Yarrell and others).

Name and Origin—The contentions associated with the name of the grayling are interesting rather than important, and the good St. Ambrose of Milan was both safe and happy in pronouncing it the flower of fishes, apparently in reference to its manifold tints and to the odour which is supposed to have induced Ausonius to dub it *Thymallus*. Few men can be found to agree as to the specific perfume which is discernible in handling a newly caught grayling in normal condition, and the fact is that in very large or very small specimens it is less strong than in a grayling of the herring size, which is the average upon many rivers. The smelt



GRAYLING.

yields precisely such a faint suggestion of cucumber, or thyme, as that which the majority of observers claim for the grayling, and as a rule it is unmistakable, if not easily defined. The suggestion has been thrown out that the odour of the grayling varies with its diet. The French call the grayling *L'Ombre Commune*, and Umber, or its corruption Oumer, is an old English local name. As to the word "Grayling," it has been referred to the gray lines along the sides of the fish. The prevailing hue of *Salmo thymallus*, as it appears in the water, is grey. The observer who, looking over the parapet of a bridge, has the opportunity of seeing a trout and a grayling lying on a shallow not far apart, will be struck with this distinguishing tone, by contrast with the rich ruddy brown of the former; and when the grayling moves away, it is like the fading of a pale shadow, very different from the brisk dart into cover of its darker-hued companion.

There appears to be no sound foundation for the belief that the grayling was originally introduced into England from the Continent. Until the early part of the present century it was not widely distributed, but even in Walton's lifetime the Dove, Trent, and the Wiltshire rivers were known to be grayling rivers. In our own time the fish has been introduced with every promise of success in the Clyde and Ayr, and is found in numbers in the Tweed. It is further to be observed that the grayling is not the only British fish of merely partial distribution. The burbot, the gwyniad, the vendace, and the chars may be classed with the grayling in this respect, and there is on the whole no justification for the assumption that the fish is not indigenous.

Appearance and Habits—The grayling resembles certain of the coarse fishes in form rather than the *Salmonidæ* of the more orthodox type, and the small, unarmed, square mouth, suggesting suction, is formed somewhat like that of the ground-feeders, the protrusion of the upper jaw being sufficient to give it character without constituting deformity, as in the barbel. Its most striking peculiarities are the huge dorsal fin and the lozenge or pear-shaped eye. The bright red, shading to violet, of the edges of the fin, and the red and black of the sides, with purple streaks irregularly marked, have warranted comparison with the wing of a butterfly. In repose, the delicate upper fringes of this fin lap curiously over, betraying the identity of the fish should the other characters be indistinct. The tail is forked and powerfully formed. The scales are small and clearly defined, and the grey longitudinal lines are peculiar to this species. The colouring of the fish varies greatly according to age. Few descriptions of the grayling agree in detail, and indeed the difference between the fish of different ages, and different districts is very marked. A pound grayling from a Derbyshire or Yorkshire river is probably a type of the best, while one of the big two-and-a-half- or three-pounders from the Southern chalk streams is almost invariably a dull presentment, the purpling of the grey vesture having changed to brown, and the rainbow hues having practically disappeared.

The grayling differs considerably in size according to the rivers which it inhabits. A pound fish in Derbyshire, Yorkshire, or Worcestershire is considered worthy of special regard, and a panier of a dozen and half will often have but one of such respectable bulk. Occasionally larger fish will be taken. In the Hampshire rivers, to which the species has been introduced during the present century, two-pounders are common, and the largest known specimen of recent years was a superbly proportioned fish of 3 lbs. 9 oz., caught by Mr. F. M. Walbran, in a hatch-hole on the Test near Houghton Mill, and duly shown at the Imperial Institute Exhibition of 1897.

The habits of the grayling differ in some

important respects from those of the trout, and in balancing the one against the other, it is essential to bear this in mind. The grayling, for example, is a spring spawner, moving to the breeding-shallows towards the end of March, or even as late as the beginning of May. It is said that the grayling, being free from domestic concerns in mid-winter when the trout spawn, works havoc upon the ova of trout, and to some extent no doubt this does occur. The grayling, however, are, at that period, in the deep, slow running water, while the trout have pushed up to the rapid streams flowing over the gravel. The extent of damage, therefore, done to trout eggs is very inconsiderable, though, when spawners are busy, some few grayling and coarse fish may be seen in the neighbourhood of the redds waiting for the few unburied eggs which may be brought down by the stream. Another important consideration is that the grayling is a fish of quick growth, but not so rapid perhaps, as Sir Humphry Davy believed when he wrote that fish hatched in May or June grew to nine or ten inches in length by September. Although the fry of the grayling, when early hatched, is so minute that a purchaser who had received a consignment is said to have imagined that the can contained nothing but water, within little more than a couple of months they are four or five inches long.

The grayling also produces a larger number of eggs than the trout, so that in a stream favourable for the fish, the increase is likely to be proportionately greater.

As a Game Fish—The merits of the grayling as a game fish may not be quite equal to those of the trout, but, all points considered, they come so near that there is little margin for dispute. The trout fights fiercely and with a dash peculiar to its breed, but the grayling fights, in its way, just as strenuously and as perseveringly. The slower movements after the first rush lead some critics into the mistake of supposing that the fish is chicken-hearted, and a remark of Walton (who probably had no large experience of its character) has given the cue for that verdict. The grayling is, in fact, the next best game fish to the trout amongst our British non-migratory fresh-water species, and it may take even longer to bring to the net than a trout of the same size. It leaps out of the water occasionally, and if its charges into the stream are not so swift, it has an artful and dangerous habit of rolling and twisting, and of boring downwards, that is very trying to tackle and nerves.

It must also be placed to the credit of the grayling that it rises freely, and is not easily "put down." It is an axiom of the dry-fly angler that a trout rises but once to the artificial fly; as long, however, as the grayling continues to rise, so long may the artificial fly be cast, and it is no uncommon result to kill your fish at the eighth or ninth time of presentation. There is nothing more full of concentrated sport than to kneel to a grayling which refuses again and again, yet is taken at last. It must be added, however, to this tribute to the grayling's generous spirit that the fish often makes ostentatious movement at the lure, without intending to take it. The grayling is a master of short rising. On all but the very "shy" chalk streams, it may be risen, if such a term is permissible, against its will. The best baskets are often made by the wet-fly fisherman on days when there is no visible sign of a rising fish, and the order of procedure is under any and every circumstance to fish the stream methodically. This is especially successful on the stone-bedded North Country rivers, where the absence of aquatic vegetation signifies dearth of insect food. Otherwise the grayling is as much a dry-fly fish as the trout, and should be treated in a similar manner.

The strongest plea for the grayling is that it keeps the fly-rod going months after the end of the trout season. The grayling may be caught from the middle of July to the middle of February; but a secure and unexceptionable limit would be August 1st to New Year's Day. It seems strange that some anglers do not place these absolute advantages—namely, three months of additional sport, and a possible dish of great excellence for the table when salmon and trout are "off"—against drawbacks that are mostly theoretical.

Tackle—"Fine and far off" is the rule with grayling as with trout. The same rod, line, and fine gut collar go with the same waders and other items of equipment. It is the fly-box that must be slightly refurnished. Practically, the oo and ooo sizes of the best trout patterns are admirable for grayling, and to them are added a few fancy flies which imitate no insect known to entomology. The red tag is indispensable, though it is beginning to be discussed in doubtful terms, and variations are ventured upon because the original dressing, so many years infallible, is supposed to have been found out by the grayling on Itchen and Test. It may be laid down as a rule that the selection of artificial flies which are pronounced best by local authorities is sound, and that the floating duns of the South, the bumbles and wet flies of the Midlands, and the spidery hackles of Yorkshire have their distinctive functions. Among the books indicated at the end of this article are representative pronouncements as to flies—Halford for the Southern dry-fly waters, Pritt and Walbran for the North, Foster for the Midlands.

The special grayling flies which may be here described are not numerous, and they are generally patterns characterised by the bit of tinsel or glitter by which the indigo-blue eye of the grayling is attracted; and almost without

exception they will serve either wet or dry, and in most waters. The best tags are the red, the orange, and the macaw; the claret, yellow, orange-claret, and furnace bumble are of almost equal value, but should be tied on, at the most, 00 hooks: and flies of the little chap order, the curses, black gnats, Hammond's adopted, Wickham's fancy, silver sedge, red and claret spinners, and at all times the hare's ear with gold or silver twist, should be in use. The grayling seldom rises, as trout do, in the evening, and the best fishing will be found between eleven and five o'clock in and after September.

The grayling does not forage in solitary determination, but ever wanders in company. The fish move from the deep pools at varying times to the adjacent shallows, and it is never very certain where they may be, except that they are not in rough ripples. The rise of a grayling is so often a mere dimpling of the surface that it is never wise to be contemptuous of the sign, and abandon a position on the supposition that the game is not worth the trouble of tempting. A two-pound grayling frequently makes no more fuss than a dace. Fortunately for the angler, the grayling generally makes his first rush up stream, and there is little fear of his making direct for the weeds. The fish should be firmly held, turned, and kept moving down stream until his powers are exhausted. Grayling are frequently lost by allowing them either to bore to the bottom, rolling and gyrating the while, or to work below the angler and bring fins and tail to bear against the stream. The outer edges of the mouth are tender, and no doubt less calculated to retain the hook than the hard interior of a trout's jaws, but the large number of breakages is not due so much to this cause as to the short rising propensities of the fish, and the consequent light hooking in the weaker portion of the mouth. When the barb is well struck into the solid flesh, the hold is really of the firmest kind, and there is no abnormal danger of breaking away.

It seems wicked to angle for a generously rising fish like the grayling with any other lure than the artificial fly, but it is often done, and there is the somewhat especial excuse in this instance, that, upon many rivers where fly-fishing would be useless in the winter, weeks and months of sport are afforded by certain methods of bottom-fishing. Some of these are purely local, others are more widespread.

"Grasshopper" Fishing — The most singular instance of a local bait in all angling is probably the so-called "grasshopper" of the West Country. In Herefordshire, Shropshire, and Worcestershire, perhaps one of our best grayling districts, this so-called "grasshopper" is still used, and has been used from time immemorial. It is not a grasshopper at all, though originally it may have been intended to imitate that summer insect. A large hook is used (No. 5 or 6), weighted with lead wrapped around the shank. This is in turn overlaid with Berlin wool of primary colours, green predominating, with yellow bands, until the affair resembles a gaudy and clumsy chrysalis. Upon the hook five or six maggots are impaled, and the game is to "sink and draw" as it is technically termed. The lure, such as it is, is allowed to dive to the bottom, and is then slightly jerked up and down as the stream bears it onwards. It is, for grayling, what the old-fashioned trolling bait was for pike, and very clever some of the West Country anglers of the old type are at this primitive method. The largest and best fish are taken in this way, but on well-preserved waters, it need scarcely be said, it is prohibited. Such baskets are not made nowadays, as those recorded by Francis in his Book on Angling, when a single rod could fill a 25-lb. or 30-lb. basket two or three times in one day. This grotesque "grasshopper" has fortunately been found wanting when experimented upon in the north or south, and it is not regarded with respect by the true angler. Why the grayling should take it is not very apparent, but the fish is rather erratic in its tastes. It is not by any means fitted with mouth or teeth to indulge in fish food, but instances have been known of grayling following and being caught fairly in the mouth by artificial minnows, and upon the Costa, which is one of the well-known grayling streams of Yorkshire, a fly dressed on the pattern of the Alexandra, but on a small hook, is often more killing than the correct grayling flies.

Swimming the Worm—The most sporting method of winter bait-fishing is probably that of swimming the worm, as described by Mr. F. M. Walbran, who is its leading exponent on the Ure and Wharfe, and by the late Mr. Pritt, whose *Book of the Grayling* was the first monograph on the subject. Grayling love to lie in herds along the gently sloping sandy shelf of a fairly strong stream, and in about four or five feet of water. The angler is equipped with a rod slightly stiffer than that used for fly-fishing; a short collar of drawn gut, attached to a freely running fine line, and a tiny pear-shaped float affixed two or three feet from the hook. A small red worm is used for bait, and the angler, wading along the edge of the stream, allows his lure to swim so as to touch and go upon the clean bottom of the aforesaid shelf. It is a method requiring much caution and skill, and although the fish will not always bite, this style is found amply to repay the fisherman for the wintry weather to which he is exposed. December seems to be the favourite month for this form of sport, and the angler prefers hard and bright frosty weather. The grayling thus treated bites very gently, seldom taking the float under, and the expert fishermen recognise the slightest slant of the painted cork as an indication for striking. It is necessary to keep out of

sight while this swimming process is carried on, and a quick strike and firm hand are essential to success. When the fish are feeding greedily, the float disappears wholly, but the only indication is frequently the abrupt stopping of the float, as if it had been caught in a weed. All these movements are to be explained by the habits of the fish. If the small red worm is travelling close to the bottom, the sucking mouth of the grayling arrests it, and it is then that the float merely halts. The fish will rise, however, to the worm as it is floating overhead, and it is tolerably certain that its sudden disappearance is the result of a grayling forced to rise a foot or so upwards to seize the morsel on its passage. The grayling will also take gentles, wasp-grubs and caddis bait, and, in the waters where these methods are possible, the best baskets are made on these occasional days of mid-winter fishing, and the grayling then are in their best condition. Fly-fishing is the only method permitted on all well-ordered grayling waters.

Range—The grayling, with a few structural differences, occurs in many of the Continental rivers, and in nearly all the lakes and rivers of Northern Europe. It is found in the United States, and in parts of Canada. In England it has been introduced into numerous trout rivers, for some of which it is not suited. Typical grayling streams are the Test, Itchen (below Winchester), Wiltshire Avon and the tributary Wylie; the Dove, Derwent, Wye, and Manifold in Derbyshire, and the higher waters of the Trent; the streams of Worcestershire, Shropshire and Herefordshire, some of which, such as the Lugg, Teme, and Arrow, are associated with grayling fishers of a past generation; the Clyde, Tweed, Ayr, and Tay in Scotland; the Dee in Wales. The rivers in which the grayling are still in the experimental stage are the Thames, Lea, Colne, and Kennet. In the more rapid streams of the Midlands and West Country, where the alternating pools and rough streams are frequent, the grayling loves the gliding heads, tails, and sides of strong currents, and so sharp is its vision, and so adapted to such movements are its air-bladder and fins, that it will rise almost perpendicularly from a depth of five or six feet and secure the passing fly.

MEASUREMENTS, ETC.—Length of head 5¼ to 6, of caudal fin 6, height of body 4¼ to 5 in the total length. *Eyes*—diameter of each 4 in the length of the head, 1¼ diameters from the end of the snout, and about the same distance apart. Upper jaw very slightly the longer; the posterior extremity of the maxilla reaches to beneath the anterior edge or first-third of the orbit. *Teeth*—fine ones in the jaws near the head of the vomer, and on the anterior portion of the palatines; none on the tongue. *Fins*—these vary with the sex, the last dorsal rays are somewhat produced in adults. The first dorsal fin commences midway between the end of the snout and on a line above the front edge of the anal fin, the height of its rays being about two-thirds of that of the body below it. Pectoral inserted in the lower fourth of the height, and as long as the head excluding the snout. Ventrals situated beneath the middle of the rayed dorsal fin, and comparatively small, terminating on a line below the hind edge of the adipose dorsal. Caudal forked. *Scales*—in regular rows, some small ones being present over the basal portion of the caudal fin. The chest, or that portion of it as far as the pectoral fin, may be entirely destitute of scales or else scaled. *Colours*—these during life are beautifully changeable; head of a bluish-purple and a golden tinge along the back, while the horizontal lines along the body are dark, and each of the scales has a golden tinge. Dorsal fins with purplish bands and ocelli, which have a purplish red centre, and there are likewise some purplish streaks along the courses of the rays, while the outer edge is likewise purplish. Occasionally there are some black spots on the fins, also scattered over the body. The brighter colours decrease with age, and grey lines show themselves along each row of scales; while the young have transverse bars or bands.

Day's *British Fishes*, vol. ii. pp. 131.

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WILLIAM SENIOR.

GROUSE—The Grouse (*Tetrao scoticus*) is found in parts of Scotland, Wales, Ireland and England. In Scotland it is pretty general wherever heather exists. In Ireland it is by no means as numerous as in Scotland, owing partly to the system of steady poaching which obtains in that singularly improvident country. In Wales it is spread over a comparatively small area, while in England at the present time the great bulk of grouse-bearing grounds are the northern counties and Derbyshire.

Attempts have been made from time to time to introduce this bird into other parts of England where the surroundings seemed to be suitable, but little success has attended these endeavours. The Hon. Gerald Lascelles, Ranger of the New Forest, informs me that, previous to his tenure of office there, experiments were made to further this object by putting grouse eggs into the nests of black game, of which a certain number still are to be found in the New Forest. But no satisfactory results ensued.

Natural History—The "Red Grouse" is a singularly handsome and attractive bird. His weight is about 19 oz.; but one may

be found to weigh as much as 29 or even 30 oz.; the length is about 15 inches. The general colour is, in the cock-bird, deep reddish-brown, while the hen is somewhat less conspicuous in hue, and the tone of her plumage quieter and more sombre. A brilliant scarlet patch is arched over each eye, and the throat is of a reddish colour. Considering this bird from every point of view—of sport, of culinary excellence, of appearance, and of the charm of the scenery amongst which it lives—it very properly occupies a special and eminent position among the game birds of these islands.

The average number of eggs laid by a grouse is seven, though fourteen or fifteen have been found in a nest, and possibly even more. The colour of the eggs is a pale olive, blotched thickly with dark reddish-brown. The hen sits on the eggs, and I am not aware that a cock-bird has ever been known to relieve his mate in her onerous duties in this respect. The early part of April is the period when grouse commence to lay, and the eggs take about three weeks to hatch.

A dry season is the best for nesting purposes, so long as there is a good supply of young heather. The winter of 1895 was one which proved singularly fatal to grouse both young and old. On many moors the intense frost and prolonged snow so damaged the heather that portions of the moors did not recover till the following year. The young heather either failed to come up at all, or not till many weeks after the usual time, thus depriving sitting hens, and young when hatched, of their customary and necessary food. The old heather plants were also in many instances so killed down as to be of little use to the grouse. For these reasons hundreds of birds died on some of the English moors. This also happened in Scotland and elsewhere. Grouse are largely dependent on a sufficient water supply existing on a moor. A *very* dry moor is rarely a good one.

There are curious exceptions to the rule that there *must* be plenty of heather if grouse are to exist in any numbers. In certain parts of Lancashire and Yorkshire, near the great centres of industry, there are tracts of country on which grouse flourish in numbers, and where they breed well, although there is practically no heather at all on them. With much trouble, a single plant might perhaps be found in one or two situations, but, to all intents and purposes, these moors consist entirely of various kinds of grasses and a certain quantity of bilberry plants. Though there is not a great amount of grouse on moors such as these, yet good and sufficient sport is to be obtained; and the birds continue to breed well, and seem strong and healthy.

Shooting—The legitimate methods of killing grouse are two:—

(1) Shooting them over dogs, and

(2) Driving them to the guns.

In Scotland the system usually followed is the one first mentioned; and the reason for this is easily comprehended, as the steep nature of much of the ground on which grouse are to be found in that country renders driving them a difficult and comparatively unproductive process, and one which it is often almost impossible to carry out satisfactorily in consequence of the difficulty of obtaining, in the sparsely inhabited districts of the Highlands, an adequate quantity of men to act as drivers. There are, however, an increasing number of Scotch moors on which driving is now regularly resorted to, and on which large bags are obtained. The moors belonging to the Mackintosh at Moy; those in the valley of the Don; at Drumour, in Perthshire, and many other moors, both in the Highlands and the Lowlands, have been carefully shot in this manner for some years past, with steadily improving results. These, of course, are tracts of country of a comparatively level nature.

Driving—It should be said, however, that most excellent and exciting sport may be obtained by driving moors which do not apparently lend themselves naturally to such a proceeding. That is, instead of being flattish in their conformation, they consist of the sides of steep hills, narrow corries, and generally broken and uneven ground. Under circumstances such as these, grouse come over the guns at every kind of height and at every sort of angle, thereby affording far more difficult and sporting shots than can as a rule be obtained when driving a reasonably level stretch of moorland. In fact, a day's driving on wild, steep, and mountainous Highland ground, which produces some fifty to seventy brace to five or six guns, is, or should be, as gratifying to the sportsman as a day of 250 or 300 brace on an easily managed and flat moor in one of the more southern counties.

In England, on the other hand, driving is nowadays the almost invariable practice; and this is so for various reasons. In the first place, English grouse are as a rule hatched somewhat earlier than are those in the bleak North, and are therefore stronger on the wing when the 12th of August arrives.

Fewer coveys, in consequence, lie well to the dogs when walking after them. This is partly due to their precocity, and possibly, also, to the relatively larger number of birds on an English moor, the latter fact tending to increase wildness. It is a very difficult matter to get a decent bag of grouse when shooting over dogs on an English moor after the 20th of August, even if it can be done so late as that, and this makes the upkeep of a kennel of pointers and setters an exaggerated and undue expense, in which few sportsmen care to indulge.

Again, the great majority of English moors lend themselves so admirably to grouse driving

that those who shoot over them avail themselves at once of the good fortune thus placed to their hand.

More grouse are killed by driving than by any other method of shooting; grand sport is obtained; and, what is very important, the number of birds is largely increased, and the health of the stock maintained and improved. It seems an odd and inconsequential thing to say that the more grouse you kill by driving, the more you improve and increase the breed; but it is so, and this is why. In walking grouse, should the weather be favourable, and the birds lying well, whole coveys are sometimes entirely destroyed, the great improvement both in guns and shooting, which has of late years taken place, being largely responsible for this; whereas, in driving, the older birds are usually the pioneers of the packs, and are therefore most liable to suffer should the shooting be accurate. The younger birds are in this way to a certain extent spared, at any rate till they are stronger and more able to take care of themselves.

Furthermore, by killing a considerably larger number of the old birds than would be possible were the moor only to be walked, one of the breeding difficulties which beset grouse is largely obviated. The interference with the nesting arrangements of the younger birds by the older ones is diminished. And this is important, as old grouse are most quarrelsome and pugnacious, and drive off from their proposed nesting-grounds many of the younger birds which are desirous of breeding and multiplying in peace and quiet. Moors which have been regularly and carefully driven for the last thirty or forty years now present such a wonderful difference in their game records that it must be evident to all that this system of shooting is very advantageous to any moor to which it is adaptable.

The game books of a well known English moor are now before me, and, as far as I can discover, the earliest mention of grouse-driving in them is in 1849. In September of that year a note is made that "on this day (September 11th) the birds were unmanageable, and at three o'clock we took station by a wall and killed a few birds out of packs which were driven past." This is by no means, I believe, the earliest record of driving, shooting in this manner having been attempted on other moors as early as 1842, if not before then; but it gives an approximate date as regards the commencement of that system which is now so prevalent on most English and many Scotch moors.

While dealing with this branch of grouse-shooting, a few suggestions may not be out of place with respect to the best method of laying out a moor for driving purposes, and the most necessary points to be observed for the attainment of sport, when the ground has been decided on. Should the moor never have been regularly driven before, two or three men should walk those portions of it which seem most promising, towards the ground on which it is proposed to build the butts, or batteries, as they are indifferently called. The usual flight of the birds can then be noticed and the necessary arrangements determined for placing the butts in the most favourable positions.

The batteries should, if possible, be erected toward the centre of the moor, as then the grouse will not be driven off it: but of course all moors vary much, and the local peculiarities must in every instance be carefully considered. The butts themselves ought to consist of blocks of turf, and should be about five feet high, and from six feet six inches to seven feet across the opening.

If it is intended that they should be used for drives both from the front and rear, then their shape should be either oblong or almost circular, with the entrance at the side: in fact I think this, where practicable, is in any case the best plan. They should always be made large enough to hold three persons and a dog or two.

The plan of the internal arrangements of a butt must be left to the fancy of the owner of the shooting: some like a small piece of wood inserted as a shelf, to put spare cartridges or anything else on. A built-up seat of turf in the corner is advisable, and a trench should be cut outside to drain the battery. Sometimes a few pieces of planking on the floor are almost essential if, as is often the unavoidable necessity, the butts have to be placed on swampy ground. Opinions vary greatly as to the proper distance that one battery should be from another. To a certain extent, this must depend on the breadth of ground to be covered by the guns; but, as a rule, fifty yards is a "workable" distance. If the guns are much nearer to one another than this, not only is the danger increased, but the picking up after a drive is more confusing, and natural jealousy comes out in a strongly developed manner, which does not tend to enhance the pleasure of a day's sport.

Sometimes, where the front of the drive is very broad, eighty or even ninety yards must be allowed between the butts, and a false battery, consisting of a couple of turf walls just higher than the butts themselves, with a man to separate and turn the packs of grouse which may come straight towards him, should be constructed equidistant between them. By this means, the great majority of the birds will fly over the adjacent guns.

Having arranged the batteries and the direction of the drives, the next thing is to see how the general plan of action with regard to the management and carrying out of the drive is to be effected.

For an ordinary sized moor, twenty men in addition to keepers and "flankers" are sufficient. They should be divided into two parties, so that one may be ready to commence another

drive as soon as the previous one has ended, the killed grouse been picked up, and the guns placed in their new positions.

Both drivers and flankers should carry flags, white in colour for choice, with a conspicuous one for the centre man, who must control the proceedings. Opinions vary as to the best colour for flags, but, as a generality, white is the safest and best. The line of drivers should be slightly horseshoe in shape, but, with a strong cross wind blowing, the *down*-wind flank ought to be strongly advanced.

Allusion has been made to flankers: they are most important, and should be men with an intimate knowledge of the moors and of the usual flight of the grouse. Their duties are to act in advance of the driving-line on either side, and to prevent the grouse from breaking away, and thus not going over the guns. A good "flanker" will not put his flag up till the exact moment arrives, as otherwise he might head the birds back instead of sending them forward, or turn them so much that they would break away over the flankers on the far side.

GROUSE.

There are, needless almost to say, many occasions when grouse will go where they please, even straight back over the drivers, and then no flankers in the world can turn them. The earlier drives of the day should be down-wind, if practicable; for, later in the day, the birds can be brought back, aided by their natural inclination, to their original ground, and will carry with them the grouse from the other drive.

Shooting over Dogs—Turning to the older branch of grouse shooting, namely, that of walking them over dogs, the points to be insisted on are:

(1) The importance of procuring well-broken dogs, whether pointers or setters.

(2) The necessity of the sportsman getting himself into some sort of "condition" before attempting to go through the hard work entailed by this method of shooting; and

(3) The advisability of working the outside higher ground of the beats early in the day.

With regard to the question of dogs, so much of the pleasure of a day's grouse-shooting depends on them that it is needless to add much on this subject. It will suffice to say that if dogs are headstrong and badly broken, they not only spoil the ground over which they range, and by this means destroy all chance of a good bag, but they also completely demoralise the temper of the sportsman, thereby minimising the probability of his killing whatever grouse may, notwithstanding the conduct of the dogs, come within range.

As to the "condition" of the sportsman, there is undoubtedly not only much inconvenience, but a certain amount of danger, in any one's attempting a hard day's grouse shooting over dogs, if he comes straight to it from office, or House of Commons, or any occupation or business of a sedentary nature. I have myself known of two or three persons who did themselves irreparable harm by coming straight from a compulsorily inactive life in London to Scotch moors, which require really hard walking, and who, by attempting too much during the first few days of the season, seriously injured their hearts.

The wisdom of working round the outside of the beat in the early part of the day must be patent to all. It is partly by this means that the grouse are induced to move towards the better feeding-grounds near the burns and the lower parts of the beat, and then they may be more satisfactorily attacked in the afternoon, when, as a general rule, they lie better than at any other time. (I am premising that the beat has, as is usually the case, the low flat grounds in the centre, and that the higher, wilder ground is on the outside.) If this manœuvre is carefully executed, the sportsman will probably be rewarded for all the hard walking of the morning by a successful afternoon on the easier ground on the lower portion of the moor.

Guns—One word as to guns and cartridges in connection with grouse-shooting, whether walking or driving. Every one has his own views on

this subject. But I do not think that any better "all-round" charge can be recommended than 3 *drs. full*, of whatever powder the sportsman may prefer, and $1\frac{1}{8}$ ounces of No. 6 shot.

As regards the gun, the only advice to be given is, go to a good gunmaker and he will sell you a good gun.

If, with a weapon thus supplied, 12-bore, slightly choked in the left barrel only, and with the above-mentioned charge, a man cannot kill grouse, then the fault lies, humanly speaking, behind the gun and not in it.

GRANBY.

GROUSE, DISEASES OF—The Grouse disease *par excellence* is an acute infectious pneumonia associated with the presence of Bacteria in certain parts of the blood system. The Bacteria are oval or coccus-like, more rarely rod-shaped with rounded ends, and belong to that group of microbes known as Bacilli. Examination of the body of diseased grouse shows that the Bacilli are not freely disseminated through the blood, but are collected in small plugs or masses in the capillaries of the lungs and liver. The microbes can be cultivated outside the body in suitable media, and in this state, when examined with high powers of the microscope, usually present the appearance of an oval or a cylinder with rounded ends. Frequently, two remain in juxtaposition, giving rise to the "dumb-bell" appearance. The majority of the cultivated germs are motionless, but a few are actively mobile, and similar organisms provided with flagella are found, though not very numerously, in the fresh blood of the grouse in the late summer and autumn. The oval forms are about ·6 μ[1] long and ·4 broad, the rod-shaped are ·8–1·6 μ long and as thick as the oval. No spores are formed.

The more severe attacks of the disease amongst grouse usually occur in May and June, but there is also an autumn attack, as a rule less frequent and less virulent. The affected birds lose their activity and seek for water. Flight is slow and limited in extent. The "call" becomes hoarse and feeble, the feathers of the back and throat lose their lustre and become ruffled. The eye is dimmed. On opening the body, one or both of the lungs is found to be congested, and the wind-pipe dark in colour; the air-spaces inside the lungs may be full of blood or some granular exudation which points to some rupture of the smaller blood vessels. The liver is congested and soft; the kidneys are also, to some extent, congested, and there may be exudation on the peritoneum.

Owing to the reluctance of the owners of grouse moors to permit experiments on their game, and owing to the difficulty of keeping the birds in confinement, we have little direct proof that the epidemics which have decimated the moors are due to the Bacillus in question, especially since the latter is, so far as we know, identical with the *Bacillus coli*, an organism which is widely distributed and frequently found under conditions which exclude disease, and which always occurs in the digestive track.

How the Bacillus gains entrance into the body of the bird is not known. If it be identical with the *Bacillus coli*, it enters the intestinal track with the food. On the other hand, experiments on susceptible mice and birds, made by mixing the cultivated microbes with their food, show that it is improbable that it reaches the vascular system through the alimentary canal. In all cases the Bacilli were digested. It may gain access through the respiratory organs, and the disease seems to spread readily from bird to bird. An infected Yellow-hammer communicated the disease to two others in the same cage, and even to six healthy birds in another cage placed close to its own, but covered by one cloth. All died within three days. It seems probable that the disease is carried on from spring to autumn and from autumn to spring by the lingering on of some lightly diseased birds, but it may also be that the microbes, after a period of sickness, may remain in the soil under the heather and grass, ready to start the disease at any moment.

The existence of the less virulent autumn disease, and the ease with which the Bacillus is cultivated outside the body, encourages the belief that a protective vaccine could be prepared which, if inoculated, would produce a transitory attack and render the birds immune from further infection. Whether it would be practical to undertake the vaccination of young birds is for the owners of the grouse-moors to determine. Up to the present time they have shown little or no inclination to make the experiment.

Two species of larger parasites are found in the Grouse: (1) a tape-worm (Cestoda), *Taenia calva*, which Baird found in the intestines, and (2) a thread-worm (Nematoda), *Strongylus pergracilis*, which Cobbold found in the intestinal cæca. The former is from 4 to 10 inches in length: the head is provided with four suckers and a small rostellum bearing a double crown of minute hooks. The segments increase in length towards the hinder end, but the largest never become longer than they are broad. Unfortunately, the short descriptions of the external appearance of this tape-worm is all we know about this parasite. Its second host, in which the larva develops, is unknown, and its effect on the Grouse can only be conjectured. It may weaken the individual, but, as far as we can judge at present, it cannot be held responsible for any serious or widely-distributed disease.

The Nematoda, *Strongylus pergracilis*, is

[1] μ = ·001 millimetre, or about $\frac{1}{25000}$ of an inch.

probably the cause of more serious disturbance. It is a minute thread-worm, the male measuring $\frac{1}{3}$ inch in length, the female being very slightly longer. As is usual in the genus *Strongylus*, the tail of the male is expanded into an umbrella-shaped bursa, each half of which is supported by four rays. Cobbold states that these worms occupied the whole length of the intestinal cæca: they are much more commonly found than the tape-worms, and exist in very great numbers. At present, we are entirely ignorant of the life-history of this parasite, and the data we have are insufficient for making any estimate as to the amount of damage it causes.

ARTHUR E. SHIPLEY.

GUDGEON—

MEASUREMENTS, ETC.—Length of head $4\frac{1}{2}$ to 5, of caudal fin $5\frac{1}{2}$, height of body $4\frac{1}{2}$ to $5\frac{1}{4}$ or even 6 times in the total length. *Eye*—high up, in or slightly behind the middle of the length of the head, diameter $4\frac{3}{4}$ to 5 in the length of the head, $1\frac{3}{4}$ to 2 diameters from the end of the snout, and $1\frac{1}{2}$ apart: interorbital space flattened. Dorsal profile much more convex than that of the abdomen, which is nearly horizontal. Body compressed, becoming more so in its caudal portion. Snout somewhat obtuse. Upper jaw the longer, the maxilla does not extend so far posteriorly as to beneath the front edge of the orbit. *Barbels*—one at the maxilla usually reaching to below the middle of the eye, but liable to variations in length. *Fins*—dorsal commences about the centre of the length of the fish, excluding the caudal fin: the length of its base nearly equals half its height; its first ray minute, its third, which is undivided, $\frac{2}{5}$ the height of the body below it. Pectoral inserted in the lower fourth of the body, as long as the head without the snout, and rounded at its extremity: it does not extend to so far as the ventral, which latter is still slightly shorter and does not reach the anal. Caudal deeply forked, with pointed lobes. *Scales*—large, and the exposed portion angular. *Lateral line*—continuous to the middle of the base of the caudal fin. *Colours*—olive along the upper portion of the head and back, becoming silvery on the sides and beneath. Upper portion of the body with numerous irregular brown spots and dark edgings to the scales, and in the young a row of dark spots cross the lateral line; but in large specimens a wide silvery band runs along the side of the body, mostly above the lateral line: a dark mark under the eye and a few black spots in the pectoral region. Dorsal fin with several irregular rows of black spots, and similar ones exist on the lobes of the caudal fin most distinct externally. Young examples are darker than adults, and more blotched and spotted: a line of spots runs across the anal fin, while the ventral is dark tipped: opercle nearly black.

Day's *British Fishes*, vol. ii. p. 172.

GUNS—BUYING A GUN—No man can confidently choose a gun for another. Nevertheless, modern improvements have made it possible for the experienced looker-on not only to detect the faults in a brother sportsman's shooting, but also their cause, whether they be attributable to the gun itself or to the action and methods of the person using it. Amongst the chief factors in remedying such defects are, first, the broken stock which most gunmakers now employ in order to ascertain the bend and cast necessary to suit the purchaser's shape and muscular development, and, secondly, the new shooting schools. As to the broken stock, it may be taken for granted that, given an experienced gunmaker and a customer more or less in the habit of handling a gun, a very close idea will be obtained of the weapon required, because the gun will be put up quickly and naturally at the object of aim—the gunmaker's eye, for instance—and he will at once see where the fault lies and correct it. For many years this has been the only guide of the gunmaker, but it is far from infallible when an adult, who has never before handled a gun, takes it into his head that he will begin shooting, for he never puts up his gun twice alike, and, when shooting seriously, he generally describes an arc with it from the hip to the shoulder, which arc varies according to his equilibrium. Thus he not only shoots wide of his object, but is proportionately dangerous to his neighbours, to whom, not less than to the neophyte, the shooting schools have become a positive boon.

The large white walls crossed with wires, over which imitation partridges are propelled, form an excellent means of ascertaining the truth, and it is somewhat startling to see the black bouquet made by the shot on the white surface—feet, even yards, wide of the very visible bird.

To all beginners these schools cannot be too highly recommended as an easy means of acquiring a fixed habit of shooting, *i.e.* to make use of a regular movement of the arms and head in firing, and, as far as possible, to plant the legs firmly in such a position that the body can be turned sharply to right or left without rolling. To attain this result it is easy to see how necessary must be the perfect fit and adjustment of the gun to the shooter's formation.

Even to trained shots these schools are of the greatest use for the purpose of trying guns before they are quite finished off.

When the would-be purchaser has availed himself of the above two methods of testing his fire-arm, should he be a sportsman with experience acquired early in life, he will probably succeed in getting a gun that suits him. He will have gone through a careful examination of barrels, lock, action and stock, and will as nearly as possible obtain his money's worth. But how to instruct the novice in his purchase? It may be that, once having satisfied himself that a gun suits him as to balance and bend, he will ask an expert friend to investigate its soundness. He will thus be able to make sure that the stock is of walnut; that no creak foreboding a probable rupture in hot shooting is to be heard in the neck; that no flaw is visible in the barrels, and that the locks are properly fixed. But how can even the most experienced tell for anybody else whether the triggers have the right pull, or even that they

are the proper distance apart? This is a most essential point, for it often happens in heavy shooting that the recoil of the second barrel causes the front trigger to cut the first joint of the fore-finger. Again, there is the setting of the trigger guard, which so often causes a swelling of the middle joint of the middle finger; either or both of these faults may put a man off his shooting for weeks. The novice must to a great extent buy his experience in this as in other pursuits. One season he will have to devote to shooting with the nearest approach obtainable to what suits him, and, as there are plenty of faddists who think it necessary to have new guns nearly every year, he should have no difficulty in getting a choice of second-hand articles at a reasonable price. From them he may pick out a pair fit to teach him what he needs, and open his eyes to the little miseries above enumerated, and perhaps many more. After this period of probation he may spend the next summer in obtaining his idea of perfection from one of the many excellent gunmakers to be found in London and other towns. He can then sell his trial guns, thus probably paying a less price for his experience than if he had begun by ordering a new pair.

As an instance of what good bargains may occasionally be picked up, I may mention that a friend of mine once imparted to me the longing of his heart for a good pair of guns, he having up to that time been shooting really well with a converted family gun which he had inherited. Asked how much he was prepared to give, he said he might go as far as £50, but could barely afford that sum. I took the measure of his stock and promised to see what could be done. In the course of the summer I found an excellent pair, and bought them—price £25 down and the other £25 on the first day of March following. Ten seasons afterwards I saw my friend heading the score, partridge-driving, with these same guns. This, however, was all pure luck; as the only alteration required was a slight paring away of the stock, especially at the toe.

Now as to ammunition. For a beginner, there can be no doubt that the first consideration is a minimum of recoil and smoke. There is no powder which need be unduly extolled above its fellows, for there is none with which *no* fault can be found; but, in my opinion, the best for regularity of shooting is the black powder, though it has the great drawback of heavy smoke and a greater recoil than any other. It is, however, less affected than others by temperature and by shaking about in cartridge-bags. But now that we have been fairly initiated in the "Nitros," a sportsman must indeed be conservative who will use black powder in covert where there are rabbits, or even on the moors in damp muggy weather.

Speaking for myself, I have great confidence in Schulze, but have also used E.C. and Cannonite, and killed with them whenever the gun was held straight. But I have found *old* Schulze cartridges reliable, whereas the contrary has occasionally been the case with the other compounds when they have been lying by for any time, as they become affected with changes of temperature. A good gunmaker will have tested all powders and be in a position to recommend the good "brand" of the year. By his advice the novice had better be guided.

W. G. Craven.

MECHANICAL—The present century has witnessed many important changes both in the form and in the mechanism of the shot gun. At its commencement, single guns were commonly used, and the clumsy and uncertain flint was the only recognised agent for igniting the powder charge within the barrel. The utility of guns with two barrels placed side by side came gradually to be recognised, the need for a reserve fire doubtless making itself felt more acutely by reason of the frequency of the miss-fires with the flint ignition. The efficacy of fulminating powder as an ignitive agent was discovered, and detonating guns of various forms were introduced. In 1807, the Rev. A. J. Forsyth took out a patent for the first percussion gun; but the principle met with so much opposition from many influential gunners of the period, Colonel Hawker foremost amongst the number, that something like a third of a century had run its course before detonating guns were at all extensively used. This system, as applied to muzzle-loading guns, had but a comparatively brief reign; for about 1836 the first practical method of loading guns at the breech instead of at the muzzle was invented. This idea originated in France, and was the invention of M. Lefaucheux, and was introduced in this country by Joseph Lang in 1857. The cartridges employed were termed pin-fire, from the awkward device used for firing. A pin projected from the side of the cartridge at its base, one end of which, reaching into the cap, touched the fulminate; the blow dealt by the hammer of the gun on the outer end of the pin caused the explosion. The breech-loading system had to contend with much opposition at its inception. One contention constantly reiterated was that breech-loaders did not shoot so hard as muzzle-loaders; and, truly, there was much to be urged against the crude idea of the pin-fire cartridge, which at first was far from gas-tight, besides being dangerous and awkward. It was dangerous, because a slight tap or a fall might at any time explode a loaded cartridge, and awkward because the pins were uncomfortable to handle and had a knack of boring holes in pocket or cartridge

bag. The introduction of the central fire cartridge removed these objections, and did much to popularise the method of loading guns at the breech. From 1853 onwards British gunmakers have given increased attention to the improvement of the breech-loading shot gun, and many important changes and valuable additions have been made. The outward form of the gun remains much the same, save for the removal of the hammers; but the mechanism has been so altered and added to that, in respect of ease and rapidity of fire, a gain of at least 50 per cent. has been attained. This has in great part been accomplished by the introduction of the so-called, hammerless system, by which method of construction the hammers or strikers are placed within the lock, instead of on the outside of the lock-plate. In this way a much more compact gun is made up, and as the hammers are automatically raised to the firing position by the drop of the barrels on the opening of the gun, a great saving of time is effected as compared with the old form of lock in which the hammers were raised by hand alone. The conditions of sport were so altered by the introduction of the system of driving game to the gun that greater rapidity of fire had become an imperative necessity, and the improvement was much appreciated. The idea next arose that exploded cases could be expelled from the gun with far greater celerity and certainty by mechanical means than by the thumb and forefinger of the loader, and this brought about the invention of the automatic cartridge-ejecting apparatus. The most recent movement towards perfecting the shot-gun consists of the device by which both locks are fired by a single trigger. Several practical and workable forms of single-trigger guns have been invented, and, judging this comparatively new idea by the persistency with which it is advocated by several prominent gunmakers, and by men of great experience, it would seem as though it too may have a prolonged period of usefulness before it.

These, briefly, are the most important changes wrought in the shot-gun, and some of the more widely used types will now be described and illustrated.

Game Guns—The game gun, being far more extensively used than any other kind, first claims attention. The general consensus of opinion is that the 12-bore hammerless ejector, with 28 in. or 30 in. barrels, and weighing about 6½ lbs., is the best gun to employ for the purpose of shooting the furred and feathered game of this country. The patterns given with 1⅛ oz. No. 6 shot in a circle 30 inches in diameter at a range of 40 yards may be about 130 pellets with the right barrel and 160 with the left. Patterns such as these will be found to be sufficiently close in practice, for a very large percentage of game is killed at a less distance than 30 yards. The accompanying illustrations will convey an idea as to the form and outward appearance of the modern game gun.

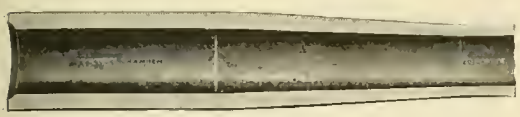
PURDEY'S GAME GUN.

"HOLLAND'S" GAME GUN.

The *Vena Contracta* is another type of game gun that is rapidly coming into favour in consequence of its extreme handiness, strength and lightness. It was introduced by Joseph Lang and Son in 1893. This gun has been designed with a view to secure greater immunity from accident with modern explosives. To effect this, there has been a remodelling of the shot gun in such way that those parts which have to bear the intensity of the strain set up on explosion of the charge are fortified, whilst in other directions there is a reduction of unnecessary strength and weight of metal. A large proportion of the total weight of metal in the barrels is placed around the cartridge chambers, where it is necessary to resist the enormous pressures sometimes given off by the more violent nitro powders. The breech action is exceptionally strong and heavy, weighing about 4 ounces more than usual, with the result that weight and strength are concentrated in the vicinity of the explosion. The barrels are 28 or 30 inches in length and, for about 2 feet from the muzzle, are exactly the same, inside and out, as those for a gun of 18-gauge. At 6 inches from the breech a curved conical portion, of a form known in the scientific gun-making world as a "Vena Contracta," commences; this joins the 18-gauge barrel to the 12-gauge cartridge chamber. Ordinary 12-bore cartridges are used, and although it might be imagined that great force would be necessary to drive the shot charge through the constricted portion of the bore, this is not the case. It is found in practice that the pellets flow through the long easy cone in much the same way as water would do. The recoil and the pressure in the chamber of this gun are practically the same as are set up with an ordinary 12-bore firing the same cartridges; but the vibration set up in the stock of an ordinary gun —which is the chief factor in producing gun-headache—is almost entirely absent in the "Vena Contracta," the vibrations being absorbed

by the mass of metal surrounding the breech of the gun.

The accompanying illustration will convey an idea as to the form and distribution of the metal in the barrels :—



"Vena Contracta," showing Section of Bore.

The "Vena Contracta" weighs about 6 lbs., and excellent results have been obtained with it both at the target and in the field. The tables given herewith were published by the Editor of the *Field* in October 1890, as the result of his trial, and sufficiently illustrate the remarkable regularity of pattern, height of velocity, and low recoil attained in the shooting of these guns :—

"Vena-Contracta" Gun (12-18 Bore), with 1⅛ oz. shot.

Barometer, 29·83 ; Thermometer—Dry 61°, Wet 61°. Weight 6 lbs. 9 oz.; barrels, 30 in.

Right Barrel—Powder (Shot-gun Rifleite), 37 grs.; shot, 1⅛ oz. No. 6 (304 pellets). Gas pressure, average 1·82 tons per sq. inch.

Round.	40 yards pattern.						Total		Velocity (10 yds.)	Recoil.
	1st ring	2nd ring	3rd ring	4th ring	5th ring	6th ring	In 30 in. circle.	Outside 30 in.	Ft. sec.	Ft. lb
1	64	49	33	20	17	18	166	138	1181	27·4
2	76	51	28	22	19	13	177	127	1167	27·2
3	62	55	30	17	18	15	164	140	1172	28·0
4	67	50	32	21	15	13	170	134	1149	26·0
5	73	46	35	20	19	17	174	130	1167	27·0
6	58	50	38	22	14	14	168	136	1154	26·8
7	70	52	26	18	16	13	166	138	1176	27·6
8	75	47	31	21	18	11	174	130	1158	26·4
9	52	41	23	24	25	23	140	164	1172	28·3
10	58	44	31	14	20	16	147	157	1186	28·2
Aver.	66	48	31	20	18	15	165	139	1168	27·3

Left Barrel—Powder, 37 grs.; 1⅛ oz.; No. 6 shot (304 pellets).

Round.	40 yards pattern.						Total		Velocity (10 yds.)	Recoil
	1st ring	2nd ring	3rd ring	4th ring	5th ring	6th ring	In 30 in. circle.	Outside 30 in.	Ft. sec.	Ft. lb.
1	46	42	30	26	24	12	144	160		
2	59	41	39	23	18	16	162	142		
3	65	48	35	17	16	12	165	139		
4	60	43	37	24	18	19	164	140		
5	55	40	38	21	19	16	151	150		
6	63	46	35	20	15	12	164	140		
7	56	40	40	27	16	20	163	141	(As above)	
8	54	47	37	25	19	17	163	141		
9	66	45	33	26	20	14	170	134		
10	58	42	36	20	22	16	165	139		
Aver.	58	43	36	24	19	15	161	143		

Small Bores—Many sportsmen pin their faith to 16-bores and 20-bores for game shooting, and no doubt very good shooting is obtained from these sizes when made by gunmakers who have paid particular attention to small bores. Mr. W. R. Leeson, of Ashford, in Kent, is a gunmaker who has made a study of 16- and 20-bore guns, and with considerable success, as the following results of the trials of a 20-bore made by the Editor of the *Field* newspaper in 1896 sufficiently testify.

W. R. Leeson's 20-bore No. 1012.

Weight, 5 lbs. 13½ oz.; barrels, 29 in.; 30 grs. powder; ⅞ oz. shot (236 pellets); gas pressure, 2·14 tons per square inch.

Patterns of the Left Barrel in 30-in. Circle.

40 Yards.	30 Yards.	20 Yards.
137	197	189
150	224	223
146	205	207
127	218	219
130	205	214
142	187	215
173	202	208
140	210	223
168	224	219
144	202	222
Average 146	Average 207	Average 214

Average velocity, 1,177 ft. per second.
Average recoil, 21·2 ft. lbs.

Patterns of the Right Barrel in 30-in. Circle.

40 Yards.	30 Yards.	20 Yards.
135	154	215
110	182	210
122	173	214
121	144	218
118	157	211
128	91	218
139	180	209
126	163	220
145	174	206
114	181	205
Average 126	Average 160	Average 213

Average velocity, 1,177 ft. per second.
Average recoil, 21·2 ft. lbs.

Mr. Leeson asserts that it is a fallacy to suppose, as many sportsmen have hitherto done, that 20-bores throw the shot like a bullet at short distances, or that properly bored guns of this calibre smash game more than 12-bores. In this contention he is certainly supported by the comparisons of the shooting of the two sizes given below. These were made by the Editor of the *Field*, at the request of several sportsmen who desired to be informed on the point :—

12-Bores, Slight Choke.

	20 Yards.	30 Yards.	40 Yards.
Pattern . . .	230	186	130
Killing Circle .	30 inches.	32 inches.	35 inches.

Leeson 20-Bore, Game-Boring.

	20 Yards.	30 Yards.	40 Yards.
Pattern . . .	213	160	126
Killing Circle .	30 inches.	36 inches.	33 inches.

12-Bores, Fuller Choke.

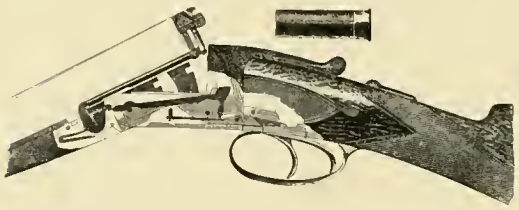
	20 Yards.	30 Yards.	40 Yards.
Pattern . . .	229	203	152
Killing Circle .	25 inches.	31 inches.	35 inches.

Leeson 20-Bore, Slight Choke.

	20 Yards.	30 Yards.	40 Yards.
Pattern . . .	214	207	146
Killing Circle .	26 inches.	30 inches.	33 inches.

From the above it will be clearly seen that although both 12- and 20-bore guns gave nearly the same pattern at 40 yards, the number of pellets at 20 yards in the 30 in. circle was less with the 20-bore than with the 12-bore; and yet the killing circle of the small bore was no smaller, at 30 yards it was even greater, and at 40 yards only two inches less than that of the 12-bore.

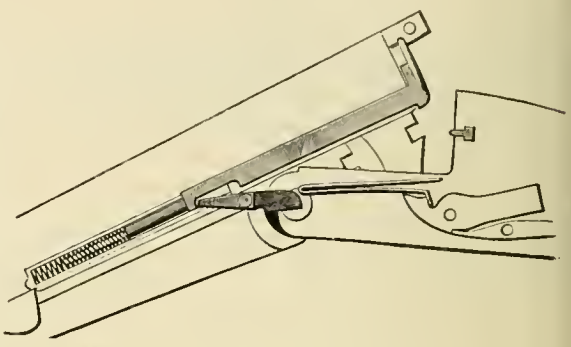
Ejectors — Messrs. Westley Richard and Co.'s ejector mechanism for throwing out the spent cartridge is contained in a box fastened upon the fore-end of the gun by a small screw. The ejector hammers are cocked by the forward movement of the extractor leg, when the latter is pushed inwards on the closing of the gun, and is held in that position by the scear. A sliding rod, fitted into the body of the gun, is driven forward by the fall of the firing hammer and placed under the tail of the scear. When the gun is opened after discharge, the end of the sliding rod, coming in contact with the scear, takes it out of the bend and releases the ejector hammer, which forcibly strikes the extractor leg and thus effects the ejection of the fired cartridge case. From the illustration it will be



Messrs. Westley Richard and Co.'s Ejector.

gathered that the end of the sliding rod cannot be in a position to move the ejector until after the fall of the firing hammer.

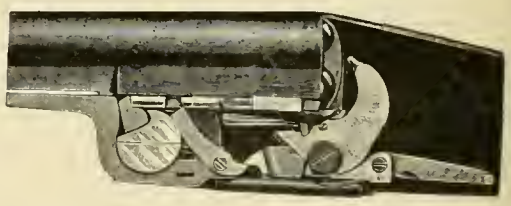
Another excellent system is that employed by Messrs. Cogswell and Harrison, the working of which is as follows. On the firing of the gun, the mainspring moves a retainer or scear into the line of outward travel of the extractor, so that on the gun being opened for reloading, the extractor, which is actuated by the ejector spring, partially withdraws the spent cartridge. In this position the outward travel of the extractor is retained until the gun is fully opened. At this point the retainer is reversed to its original position by coming into contact with the body of the gun; the pent-up force of the ejector spring then comes into play and completes the throwing out of the cartridge case. In the event of a sticking cartridge the lever or lugger forces out the cartridge for extraction. In this system of ejection the only parts are the retainer or scear,



Messrs. Cogswell and Harrison's Ejector.

and the ejector spring, which latter is placed in the ordinary fore-part loop on the barrels, an exceedingly neat arrangement.

Compared with the Greener ejector of 1880, the essential difference in the W. W. Greener "Unique" ejector gun consists in the tumblers, which, instead of being each in one piece, are jointed; the forearms by which they are raised to cock are pivoted in the tumblers instead of being solid with them. The parts are adjusted so that the action of each lock is as follows: On the gun being opened after firing, the tumbler is raised, both parts moving substantially together until the scear nose is beyond the bent, the gun at that time being opened to its full extent; at this moment the point of the fore-arm slips past the tripping point on the cocking swivel and, by the power of the mainspring, is driven down upon the projecting end of the ejector lever, and the fired case is thrown out. This action is most sharply brought about, owing to the great strength of the mainspring and the sudden stop to the blow by the forearm of the tumbler driving the lower end of the ejecting lever until it is stopped by

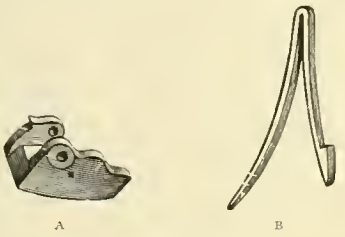


W. W. Greener's "Unique Ejector.

abutting against the cocking swivel. The gun may then be loaded without any further opening of the barrels. As it is closed the back or striking part of the tumbler descends until retained in bent by the scear, and remains there at full cock

until the scear is released ; the forearm, carried down on its pivot, becomes shorter as it descends. When the upper part of the tumbler falls to fire the cartridge, the forearm is thrust forward until its extremity again engages with the tripping stud on the cocking swivel, and is ready to perform again the like motions of cocking and ejecting upon the gun being re-opened.

Gunmakers have for many years been striving to reduce the number of parts and to strengthen the limbs of the ejector work in double-barrelled guns, and this has been gradually accomplished, so that there is now much less risk of ejector guns breaking down. The general tendency has been towards dispensing with the scears and scear-springs and to adopt the push over centre system. One of the best and simplest forms of this arrangement is that in Messrs. Holland and Holland's "Royal" A. B. ejector gun. Here there are but two limbs in the ejector lock, as will be gathered from the accompanying illustration, A



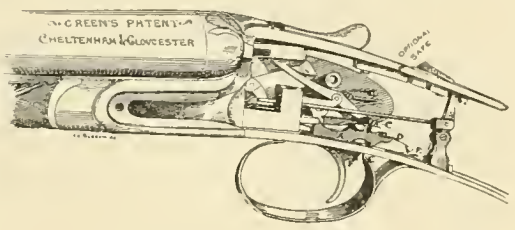
Holland's "A. B." Ejector.

being the kicker and B the actuating spring. The former is raised to its cocked position by the end of the extractor when the gun is closed, and is pushed over centre by a projection on the end of the ordinary cocking lever. These two parts are very strong, and it is improbable that any further simplification of ejector mechanism can be made.

The foregoing may be considered as the four leading types of ejector.

Single-Trigger Double Guns—Quite recently there has been a decided movement in favour of double guns, with one trigger to actuate both locks. One of the most reliable single-trigger double guns is that made by Messrs. Green and Son, of Cheltenham, an illustration of which is here given.

The mechanism of this gun consists of a longitudinal sliding bar, provided with studs for firing both barrels, mounted on the trigger plate. This bar is held in its normal position by a bolting catch, which also acts as the trigger safety. The involuntary or second pull is effectually prevented, either by the toe of the guard (which has a sliding motion engaging with the trigger) or by a movable tongue mounted in the rear of the trigger—both being actuated by the recoil of the gun. The simple device for altering the order of firing is a most important feature of Messrs. Green's invention. The ordinary thumb safety slide is utilised for this purpose ; so that, when required, by moving the slide from "safe" to "optional" the left



Green's Single-Trigger Gun.

barrel can be fired first, followed by the right, or *vice versa*.

The principal movement is obtained by a neatly-arranged switching trigger actuated mainly by the tumbler of the lock, the blade of the trigger being switched from one scear to the other by a simple but effective combination of a pivoted lever and its spring. To prevent the recoil of one barrel discharging the other almost simultaneously, there is fitted what may be termed a "timer," whereby the action of the switching trigger upon the scear of the other lock is delayed for an instant, but sufficiently long to prevent its touching the scear until all recoil and consequent movement of the gun after the first discharge has ceased, when the trigger can be pulled a second time to discharge the second barrel. There is no gunmaker so enthusiastic on the subject of single-triggers for double guns as Mr. Charles Lancaster : he has gone so far as to fit them as double rifles.

C. Lancaster's Single-Trigger.

Twin-triggers—In these guns the two finger pieces or pulls are placed one under, or

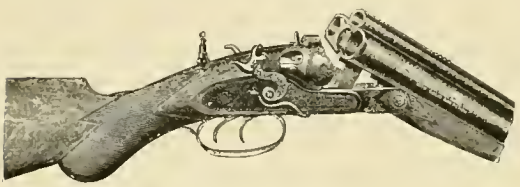
Lang's Twin-Trigger Gun.

nearly under, the other, so that they are in the arc of a circle described from the knuckle of the

fore-finger. By arranging the triggers in this way either the right or left barrel may be fired without relaxing the grip on the hand of the stock. This system is applicable to double guns or rifles of all types.

Messrs. Joseph Lang and Son are the sole proprietors of this patent, but it is also manufactured under license by Mr. W. P. Jones, of Birmingham.

Combination, or Shot and Ball Gun—A weapon which has been found to be exceedingly useful in foreign countries is a combination shot gun and rifle. This has two barrels side by side as in an ordinary shot gun, but with a rifle barrel on the top taking the place of the usual top rib. This rifle barrel is useful for shooting deer and other small game. The weight of this weapon ranges from 7 lbs. upward, according to the size and power of the cartridges to be used. The firing arrangements are simple and not liable to get out of order. The following is a good example of a gun of the kind.



W. P. Jones's Three-Barrelled Gun.

A gun of another type is the "Paradox," which is a double gun bored to shoot shot or ball. With $1\frac{1}{8}$ oz. No. 6 shot this gun makes the pattern of a modified choke—140 to 160 on the 30 in. circle at 40 yds. These guns are made in the following sizes, 8, 10, 12 and 16, and give results on the target proportionate to the charges used. The 12-bore is the size generally employed.

Pigeon Guns—In shooting pigeons from the trap larger charges are generally employed than for game shooting. This necessitates a longer case, a $2\frac{3}{4}$ in. paper case being generally used for pigeon shooting, and a somewhat heavier gun, 7 lbs. to $7\frac{1}{4}$ lbs. being the usual weight for guns of this class.

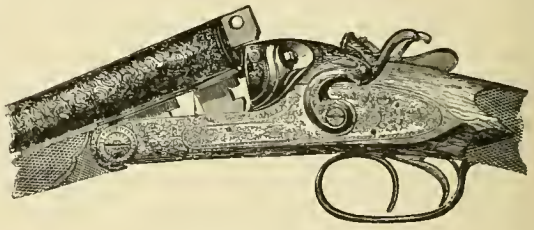
Messrs. James Purdey and Sons, Stephen Grant and Sons, and E. J. Churchill are well known for the successes of their pigeon shooting guns, as well as for the excellence of their game guns.

Ford's special gun for pigeon or wildfowl shooting has a solid bar action (not cut away to admit the springs), and is fitted either with side or under lever. This gun weighs from $9\frac{1}{4}$ lbs. upwards, according to length of barrel, and is made to take No. 12, $3\frac{1}{4}$ in. "perfect" cases. Thus a charge of 2 ounces of shot can be used with splendid results at 60 yards range. In the face of the action is a recess into which the barrels are drawn by a double grip eccentric lever. After the barrels are fairly home the last push of the lever places another bolt across the extension, making the gun perfectly solid. The bottom lump extends beyond the end of the barrels, and, on the closing of the gun, this extension acts as an additional fastening. This gun has the equivalent of seven grips, and, from

Ford's Multigrip Gun.

the form of the action body, it is impossible for the flash from a split cartridge rim or faulty cap to affect the shooter.

The most extensively adopted method of increasing the holding power between the barrels and the breech action is Greener's patent cross bolt. This consists of a bolt moving transversely through the breech action and passing through an aperture in the rib extension. An illustration is given of this most valuable auxiliary bolt.



Greener's Crossbolt.

The Screw Grip Action—This is a patent that has been adopted by Mr. W. R. Leeson for use in his hammerless guns for a number of years and with eminently satisfactory results. The screw grip arrangement is applied in the following manner:—The barrels are jointed to the breech with an extension of the upper rib, firmly binds them to the action at the point most calculated to resist all tendency to spring apart at the moment of firing. They are held down, first by the ordinary Purdey bolt system operated by a vertical shaft through the head of action; this shaft carries upon it the "screw grip" of tempered steel working in a square-threaded screw cut in the solid portion of the breech; this grip has an enlarged head, which engages with the extension of the rib, firmly drawing the barrels home in the act of closing. The entire arrangement is worked by an ordinary top lever attached soundly to the

bolt shaft and the screw grip. A gap cut in the head of the latter allows the barrel to pass in opening the gun, the lever having been moved to the right. When closing, the gun is locked by means of a spiral spring, mounted on a rod actuating both the locking apparatus and the safety bolt. The soundness and holding down power obtained by this introduction of the screw principle, applied as it is to the most effective point (the farthest from the barrel's centre of motion), is unquestionable, and the working is characterised by perfect smoothness and freedom. Another important feature is the insertion of the strikers from the face of the action, a method that effectually prevents wet or a flash from the cap entering the lockwork. Guns with this action have had from fifty to sixty thousand shots fired from them without becoming shaky or loose at the breech.

Shooting Schools—A description of the shot-gun would be incomplete without some mention of the modern shooting school. A good example of the out-door school of gunnery for sportsmen, several of which have sprung up around London and in one or two places elsewhere in recent years. Notably those of Messrs. Holland and Holland, at Cricklewood, Middlesex, of Messrs. Lang and Son, at Wimbledon Park, Surrey, and of Messrs. Cogswell and Harrison, at Blaydon, Surrey. The two latter are on the London and South-Western Railway, and of easy access. All possess beautifully wooded grounds, and are fitted with every convenience for visitors.

A tower 50 feet in height, having several platforms, from which inanimate birds are thrown in every direction, affords practice in shooting at objects overhead. For gun-measuring purposes there are mechanically driven birds, some rising vertically and others at a steep angle.

WILDFOWL GUNS—In the sport of wildfowl shooting the conditions are totally different to those of game shooting, and therefore another class of weapon is required. In game shooting the sportsman selects one object to fire at; the shooter who "browns" his birds, *i.e.* habitually fires at and bags more than one head of game for each shot, is dubbed a pot-hunter by all true sportsmen. Wildfowl shooting is governed by a different code of rules, the killing of a number of ducks or geese at one shot being accounted unto the fowler for cleverness. This, doubtless, is owing to the fact that wildfowl are both strictly gregarious in habit and much more difficult to approach than are game birds.

12-Bores—There can remain no doubt in the mind of practical wildfowlers at the present time respecting the all-round utility of the 12-bore gun for general purposes of wildfowl shooting, provided this is made slightly heavier and stouter than the gun ordinarily employed for game shooting. The wildfowling 12-bore may be bored for the long paper cases or for the thin brass cases known as "perfects," which are exclusively manufactured by the originators, Messrs. Kynoch and Co., of Birmingham. These thin metallic cases, being thoroughly waterproof, have much to recommend them for use in a sport so humid as that of wildfowling.

10-Bores—This size appears to be less used now than formerly; and this, doubtless, may in great measure be accounted for by the fact that the long-case 12-bores, with their increased load, now trench closely upon the power and attributes of the ordinary 10-bore. Modern gunners, therefore, appear to overlook the 10-bore, preferring to take to the 8-bore whenever an increase of power is found to be requisite.

8-Bores—This is by far the commonest size in use of the largest shoulder duck guns. Under certain conditions of sport the 8-bore will be found extremely useful; for, with a gun of this weight and power, wildfowl may be killed at much greater distances than with lighter weapons. The increased range and killing power of the 8-bore—and this applies also to larger guns in proportionate degree—is derived principally from the increase both in size and weight of pellets and of shot charge. A pellet of No. 1 shot is more than twice as heavy as a pellet of No. 4 shot, and it will readily be perceived that a $2\frac{1}{4}$ oz. load of No. 1 from an 8-bore will be killing fowl handsomely when the $1\frac{1}{4}$ oz. of No. 4 from a 12-bore simply rattles harmlessly upon their feathers. For boat-work and for shore shooting at large gatherings of fowl, the 8-bore is at times particularly useful. Some wildfowl gunmakers have recently given much attention to the production of light double 8-bores, and these have been turned out weighing little more than 10 lbs., to carry a charge of 2 oz. shot with a proportionate powder load. The average weight for a double 8-bore would seem to be about 12 lbs. to 13 lbs., and such guns carry $2\frac{1}{4}$ oz. of shot. Heavier double and single 8-bores have been made, and these carry from 7 drs. powder and $2\frac{1}{2}$ oz. shot up to what is practically a 4-bore charge.

4-Bores—This is the biggest calibre shoulder duck gun made in a general way. Some few 2-bores have been made by two of our wildfowl gunmakers, probably not a dozen in all; but as these guns shoot the paper cases, there is not so much difference as regards charge and power between this size and the gun bored specially for the No. 4 "perfect" case. The ordinary weight of a 4-bore paper case gun is about 13 lbs. to 14 lbs., and for such guns the charge is about 9 drs. powder to 3 oz. lead. A good weight for a gun bored for the thin brass cases is 15 lbs. to 16 lbs., and in such guns an extra $\frac{1}{2}$ oz. of shot and a drachm and a half of powder may be used with comfort. Brass case

guns of about 18 lbs. are built, and in these 12 drs. powder and 4 oz. of shot may be used, but a quarter of a pound of shot is about as much as most wildfowlers care to fire from the shoulder. The weights given are for single guns. Few double 4-bores are made, such guns proving unmanageable save in the hands of persons of quite exceptional physique. But few hammerless wildfowl guns are seen; and this is singular, for it cannot for one moment be doubted that the hammerless system is by far the safest, quickest, and best for all purposes of wildfowl shooting.

The Care of Guns—A few hints on the care of guns will appropriately close this article. At the end of a day's shooting, the barrels should be removed from the stock and thoroughly cleaned with paraffin oil. After the superfluous oil has been removed, they should be coated inside and out with pure vaseline. The mainsprings should be released and the breech-action wiped over with a little vaseline, and the stock rubbed with an oily rag, linseed oil for preference. Webley's anti-corrosive lubricant, "Semper Idem," may be used instead of vaseline.

At the end of the season, the gun should be taken entirely to pieces and thoroughly cleaned and lubricated, special care being taken to remove all traces of lead from the interior of the barrels. This may be done by placing a cork in one end and filling the bore with spirits of turpentine. When practicable, it is far better, on account of the complications of modern guns, to entrust the maker of the gun with the final cleaning, before putting it away until the next season.

H. F. Phillips.

[*See also* Rifles.]

GYMNASTICS — Gymnos (nude) defines the condition in which the Greek athlete practised his physical training, but modern usage has diverted this derivation, and the term is now generally accepted as implying the practice of physical exercises, as usually taught in a gymnasium. The word is frequently used also to discriminate between the physical exercises practised indoors, and those practised in the open air, such as running, cycling, throwing the hammer, and other similar pastimes which are generally understood as belonging to athletics.

Greek Gymnastics have at the present time no place or influence in the gymnastic world, and though an attempt has recently been made to revive them, they were modernised in details, and would more properly come under the designation of athletics. Although the decadence of Greek gymnastics is in itself a matter of regret, it may be said that it is not entirely lost to the present generation, for the principal teachers of gymnastics generally choose as their physical conception the graceful model of the antique Greek school.

Educational Gymnastics is a term given to physical exercises which are usually taught in schools, and which are specially adapted to the requirements of pupils of both sexes, and the facilities afforded by the schools in the matter of space and equipment. This branch of gymnastics is sub-divided into various systems, which are named after the respective countries from which they originate. The partisans of these systems claim for their respective methods special advantages.

Swedish Gymnastics comprise exercises without apparatus, and are sometimes known as "free movements." These motions are divided into groups for developing the various parts of the body, such as the ankle, feet, legs, trunk, arms, neck, etc.

German Gymnastics may be considered as involving the opposite principle to Swedish gymnastics, for although they include "free movements," or exercises without apparatus, these are only practised as a rudimentary preparation to more serious work. Various and complicated apparatus is in constant use in every town, village, and school in Germany. Indeed, its great feature is the universality of its indulgence, and it undoubtedly takes the place occupied in England by athletics. The State not only recognises its usefulness, but has official control of its practice, making it compulsory for every child and adult to undergo a prescribed amount of such physical training. That this has had a beneficial result upon the health, character, and practical ability of the German race is recognised by all. German gymnasts are very expert upon apparatus, and at their festivals some very clever feats, which have a useful aim, may be seen. This is particularly the case with their Escalading Tableaux.

Danish Gymnastics are symbolical of what we should expect from such a race, full of agility, nimbleness, and daring, with a liking for anything of a warlike character, such as the lance, dagger, sabre, or foil. Indeed, they combine the variety of the German school with the vivacity of the French. Their particular forte is perhaps tumbling and rope-climbing.

Russian Gymnastics appear to aim at the art of the development of the body rather than the acquisition of skill in performing difficult feats. Nevertheless, even from this scientific standpoint, they are necessarily thrown upon the expedient, as in other countries, of largely introducing the principle of variety into their movements. The cold climate which they are compelled to endure, for a lengthened period of the year, forces them into movements of activity, rather than the slower feats of strength. One of their favourite methods is to jump through a double line, a feat which requires a

considerable amount of judgment, combined with looseness of limb and abdominal contraction.

French Gymnastics have recently had the advantage of being taken in hand by the State, and English ideals seem to be their favourite model. The movements are conducted to musical accompaniment, and must be performed unanimously to ensure success.

Swiss Gymnastics are very similar to those practised in Germany. They have the same liking for *fêtes*, and the feats which are witnessed there are of an extraordinary character. The gymnastics in the schools are also very picturesque, and are often accompanied by Tyrolean choruses.

Italian Gymnastics are not of the active character of the more Northern Countries. They have, however, one or two features essentially their own, such as the Floor Movements with a pair of dumb-bells resembling the English flat-iron. In these exercises they go through many attitudes, resting on the irons and feet only. Another is the practice of marching with baskets poised upon their heads, in order to exercise the muscles of the spine and neck, thus ensuring a straight and graceful carriage.

Spanish Gymnastics on account of the climatic conditions of the country, are necessarily of a slow and deliberate type. Their principal feature is their power of equilibrium.

American Gymnastics present no special feature of originality, if we except the wonderful progress they have made in the manufacture of appliances suitable for physical exercises. By means of their pulley-apparatus, physical training at home is made easy. Americans are also very thorough in their methods of partaking of exercise. They have evidently searched the old world, and culled the best points, which they have endeavoured to improve for their special requirements.

English Gymnastics are very similar to the American system. They have made use of the best features of exercise, as taught in other countries, and adapted them to their special requirements. They have wisely introduced music and recreation into their work, and made light and cheerful that which is sometimes in danger of becoming dull and monotonous. Variety has not been lost sight of, and for this reason English Gymnastics compare very favourably with the systems of other countries.

Finn Gymnastics—Although Finland is now a province of Russia, the Finns have a system of Gymnastics which is essentially their own, and which possesses so many elements of originality, dash, vigour and grace, that no notice of Educational Gymnastics would be complete without some particulars of it. As in Russia, the climatic conditions of Finland render it imperative that the influences of a cold and rigorous season should be resisted by recourse to such active physical exercises as will tend to keep the blood at a proper temperature and the muscles and organs of the body in a proper and healthy condition.

Games are not always possible in Finland, the winter being long and severe. In accepting the alternative of Gymnastic exercises under a covered roof, the Finns very naturally evade monotony of cut and dried systems by introducing as much variety as possible into their exercises, as well as in the shape of their apparatus. The beneficial effect of this is at once seen in their sturdy, muscular figures. Their Gymnastic movements possess all, if they do not excel, the precision of the Swedish drill, while it has none of the latter's jerky and ungraceful style. One of the best features of Finland Gymnastics is a set of movements which they perform with a bar of steel, measuring about 4 feet 6 inches long, and $\frac{3}{4}$ inch in diameter, and weighing about 5 lbs. Some of the attitudes of a squad of men with this implement are most graceful, while the effect upon the physique cannot fail to be of the most beneficial character. Nor are the women of Finland less experts at Gymnastics than the men, for both single and married women join systematically in these exercises. Indeed, we have seen an exhibition upon the parallel bars by married women in Finland which would be considered very creditable to any ordinary class of men in other countries. Taken altogether, Finland Gymnastics are of high merit, and they are entitled to much praise for their enthusiasm and skill.

Recreative Gymnastics embrace all physical exercises which are undertaken from a recreative point of view. These do not necessarily debar those movements described under the heading of Educational Gymnastics, but would include them in an intricate form, or when exhibited by large numbers of gymnasts. Indeed, we know of no more novel, exhilarating, and pleasing sight than to see a musical drill performed by a large number of school children, with an occasional vocal chorus. Such a sight can now be happily seen at any of our large Board Schools, or a similar sight may be witnessed at any of our large gymnasia, or with some of our regiments at Aldershot and other camps. Recreative Gymnastics of this kind are more common in England than in other countries, and the beneficial results cannot be overestimated, for they not only possess the fascination of dancing, but from their more varied character, they secure a greater amount of physical benefit, and the musical accompaniment enables the pupil to partake of a greater amount of exercise, as in marching. Swedish Gymnasts and other opponents of Recreative Gymnastics argue that, by the introduction of music, precision and correctness of detail are sacrificed, but this need not necessarily be the case, for naturally

the pupils are first taught without the music. Although the English gymnasts base their Recreative Gymnastics largely upon musical drill, they frequently pursue the more complicated forms of practising intricate gymnastic feats upon horizontal and parallel bars, rings, trapeze, vaulting-horse, and other kinds of apparatus, but physical results in these cases are not so satisfactory as in the musical drill. At the same time a greater amount of muscular strength, activity, and resource are secured, which prove of great utility in many walks of life, and for this reason, the practice, if not pursued to extremes, is to be commended.

Recreative Gymnastics on the Continent are conducted in quite a different fashion. They have drills performed by large bodies of gymnasts, but they are unaccompanied by music. The orders are given by leaders, who are placed over sections, and who in turn take their orders from a chief leader. It is, in fact, conducted on the military system of issuing orders. It is a very fine sight to see, at one of their great gymnastic *fêtes*, several thousands of gymnasts performing in this way simultaneous movements. In another form, however, Continental gymnasts have quite a speciality in Recreative Gymnastics. In this "simultaneous squad" practice, several thousand gymnasts are divided into groups. To each group are allotted various pieces of apparatus, and at a given signal each member of a group performs a stipulated exercise.

Acrobatic Gymnastics may be described as an advanced stage of Recreative Gymnastics. They are useful as showing the marvellous degree of perfection to which the body can be trained, and the wonderful powers which such a physique possesses. It must, however, be pointed out that such a training is not advisable, as often, after the great strain to which the valvular and arterial system is exposed, collapse of the side walls of the blood vessels takes place, and an aneurism results.

Medical Gymnastics is the name given to movements which, scientifically based upon physiological conditions, are calculated to improve weak and delicate physiques. For this work an accurate knowledge of the muscles and their functions is required of the teacher. By relaxing one, and contracting another, group of muscles, the bones can often be corrected out of crooked into straight lines. The thorax and abdominal walls can be enlarged, and thus, by giving more room to the organs, greater comfort can be experienced, and very often ailments of the chest and liver, and other physical and organic defects absolutely remedied.

A. Alexander.

Glossary.

Bar-bell—Two large metal balls connected by an iron rod about 5 feet long and 1 inch in diameter. The weight varies largely, the heaviest being about 200 lbs. For exercise a light bell of wood is frequently substituted.

Dumb-bell—Two masses of metal joined by a handle, which is usually covered with leather. The weight varies from 1 lb. to about 16 lbs. a pair, according to the age and strength of the user.

English Board—A spring board about 5 feet by 3 feet 6 inches, resting at either end upon bars, which are inserted into rings upon four stands, each about a foot high. The rings must clutch the bars loosely so as to give the springs free play.

Flying Rings—Rings suspended from ropes usually from 9 to 12 feet long, the rings themselves being about 9 inches in diameter. They should hang about 3 feet from one another, and ought to be covered with leather.

Horizontal Bar—A bar of wood about 6 or 8 feet long, with a core of steel inserted down its whole length. The diameter is usually about 1½ inches, and the ends are inserted into posts by pegs whose height can be graduated.

Indian Clubs—Wooden clubs, in shape like a champagne bottle, but tapering rapidly at the end furthest from the thin neck which the hand grasps. They usually weigh about 4 to 7 lbs. each, and vary in length from 18 to 24 inches.

Parallel Bars—Two bars of wood of equal height from the ground supported at their extremities by stout posts. Usually about 8 feet long and from 4 to 5 feet high.

Trapeze—Consists of a bar of wood from 2 to 3 feet long, joining the ends of two ropes which swing freely from the roof.

Vaulting Horse or Wooden Horse—Consists of a solid block of wood, shaped somewhat after the manner of a horse's body, standing on four legs or props some 4½ feet above the ground.

HARE—The genus *Lepus* includes about twenty species, which are restricted chiefly to the Palæarctic and Nearctic regions, although one (*Lepus brasiliensis*) is found in South America. The common brown hare (*Lepus timidus*) may be regarded as typical of the genus, and is characterised chiefly by the great length of the ears and hind-limbs.

Distribution—It occurs throughout Europe, except in the north of Russia and in Scandinavia, although found in Denmark and East Finland. Its absence from Scandinavia renders it possible that the name *timidus* was applied by Linnæus to the mountain hare, and some writers accordingly employ the specific name *Europæus* in preference. The hare of Sardinia has been described as a distinct species, *Lepus mediterraneus*.

Colour—Its fur is usually of a sandy colour, greyer in winter, interspersed with long black hairs which, being set close along the dorsal surface, cause it to look blacker on the back than elsewhere, the upper surface of the short tail and the tips of the ears being also black. The under parts are pure white. The colour of the fur differs, however, in different latitudes and at different seasons of the year; showing a tendency to become white in winter in northern latitudes, while assuming a reddish-yellow hue in the more genial climate of South Europe, where in winter its prevailing tint is grey.

Varieties—Beyond the change which takes place in summer and winter, it may be said that

the common brown hare is not subject to much variation in colour, although at rare intervals grey, sandy (or yellow, without any black hairs), parti-coloured, white, and even black varieties have been seen and procured.

At Tillyfour in Aberdeenshire and in the Isle of Mull a large yellow variety with hazel eyes, and weighing about 10 lbs. has been noticed. (*The Field*, October 31 and November 21, 1896.)

A grey variety of the common hare has been occasionally noticed in Norfolk, examples of which have been shot at Burnham, Sutton near Wells, near Cromer, and near Scole (*Zoologist*, 1865, p. 9646: 1866, p. 385; see also Gurney, *Trans. Norf. Nat. Hist. Soc.*, vol. i. p. 26, who mentions a variety of the ordinary colour with the face white).

In January, 1865, a parti-coloured hare was killed near Salisbury. It was unusually white all over the face, and its hind-quarters were of a silvery grey. Its pale colour could not be attributed to age, for it was a young animal, weighing about 5½ lbs. On March 5, 1866, a hare was killed at Stalham, Norfolk, which was peculiarly marked by having a large patch of white on the forehead, extending from the tip of the nose to the base of the ears, the remainder of the fur being of the usual colour. In October, 1882, Mr. J. Whitaker, of Rainworth, near Mansfield, shot a hare which had three of her legs white as far up as the first joint, the fourth (a hind one) being white up to the body. She had also a white stripe on her side.

Daniel, in his *Rural Sports* (vol. i. p. 446, and Suppl. p. 694), mentions several instances of white hares; and Scott, in his *British Field Sports* (p. 361), gives an account of a coursed hare which was said to have become white from fright!

In December, 1854, an albino hare was shot at Trebarrow, near Dolsdown, Cornwall, by Mr. Southby, of Cambridge Terrace, Hyde Park, who had it preserved as a curiosity. Another albino was shot by Mr. H. M. Spurling, in North Devon, and was preserved by Rowland Ward, in October, 1884.

In January, 1875, a white variety of the common hare was killed at Kintore, in Aberdeenshire, but this animal had a light-brown tinge down the back. It was reported by Mr. W. E. May, of Kintore, in the *Field* of January 16, 1875.

In October, 1888, the Earl of Burford, at Bestwood Park, Notts, shot a full-grown white hare, with eyes of a pale blue; and in the same neighbourhood a white leveret was caught in the previous April. These are both preserved in the curious collection of varieties belonging to Mr. Whitaker, of Rainworth. In December, 1888, a white hare was shot at Rufford; and it is curious that these should all have occurred in one year in a district where hares are now by no means plentiful. So recently as September, 1890, Mr. Alfred Turner, of Kington, Herefordshire, while beating a potato field near that town, found and bagged a pure white hare with pink eyes, as mentioned in the *Field* of September 20, 1890.

Black hares are apparently of much rarer occurrence, though several have been reported at intervals in different years. So long ago as 1828, Dr. Fleming, in his *History of British Animals* (p. 21), noticed a black hare which was "lately killed at Netley, in Shropshire, by his respected friend, the Rev. F. W. Hope." And some years ago one was shot at Blake Hall, in Essex.

In November, 1853, a black hare was coursed and killed at Enville, the seat of Lord Stamford. A perfectly black hare shot at Denham, in Suffolk, is preserved in the possession of Sir Edward Kerrison, Bart. Another, full-grown, was shot at Firle by General Gage. In 1885 one was shot near Lutterworth by Mr. Joshua Harrison, of Parlton Field, and another about the same time by Mr. J. Cross, of Althorp Towers, near Rugby.

Weight—The average weight of a full-grown brown hare may be put down at about 8 lbs., but this weight has occasionally been considerably exceeded, particularly in Lincolnshire, where the hares are unusually fine and heavy. Thus, in October, 1877, a hare was shot on the farm of Mr. Tupholme, of Eastville, near Boston, which weighed 11 lbs. 3 oz.; and in the *Field* of November 10, 1877, others are reported to have been killed in Lincolnshire, weighing respectively 11 lbs. 3 oz. and 11¾ lbs. Perhaps the heaviest on record is one which was shot in October, 1876, by Mr. Robert Henderson, on the Longwitten estate, near Morpeth (the *Field*, October 28, 1876). It is said to have weighed 13¼ lbs.

Russian hares are considerably larger than English ones, and are much more thickly furred. Two shot in October, 1893, weighed 12 lbs. and 14½ lbs. respectively. (*The Field*, November 18, 1893).

Habits—The mischievous operation of the Ground Game Act for the past seventeen years, and the neglect on the part of the Legislature to provide a close time for hares,[1] have caused a woeful diminution in many parts of the country of this most useful animal. It is no exaggeration to say that in some counties, more particularly in the south of England, the number of hares now to be met with is about one-fifth of what it was before the Ground Game Act was passed in 1880.

[1] The so-called Hares Preservation Act of 1892 imposes no penalty for killing hares out of season in England. It merely provides that they are not to be sold or exposed for sale during the months of March, April, May, June, and July. In Ireland, however, by 42 and 43 Vict. c. 23, no one may kill or take a hare between April 20 and August 12 under a penalty of 20*s*.

Hares have suffered reduction more than rabbits for several reasons. Their larger size renders it more difficult for them to escape observation; they do not as a rule go to ground, unless hard pressed by a dog; they breed less frequently in the year and have fewer young at a birth. Added to this, they are inconsiderately coursed so late in the spring that many does in young are killed, and are then utterly unfit for food. Under this disastrous process of reduction, it is no wonder that English hares are getting scarcer every year.

The champions of sport and the advocates of humanity and common sense have alike failed to convince their unreasonable opponents of the wisdom of enforcing a close time. One would have supposed that the vested interests of masters of harriers, owners of greyhounds, game preservers, and game shooters, to say nothing of game dealers and game consumers, would have long since operated to secure the passing of such a Bill as is needed, and it is difficult to understand on what grounds so reasonable a measure has been so persistently opposed.

Hares breed when twelve months old, and the female, after thirty days' gestation, brings off from two to five young. Adult hares will breed two or three times in a year.

Unlike the rabbit, which is born under ground naked and blind, young hares at birth are deposited in a "form," are clothed with fur, and have the eyes open. They are thus sooner enabled to shift for themselves and escape their enemies. In time of danger they are often transported from their place of birth by the parent, which carries them one by one in her mouth as a cat carries her kittens, to be concealed in a place of greater safety. Hares swim well, not only when pressed by hounds, but also when in search of a mate, or seeking fresh feeding grounds across a river. This is especially the case on saltings near the sea, when to escape the incoming tide a hare which has been surrounded by the water is compelled to swim to reach dry land.

The amount of sport which this animal provides, in the shape of hunting, coursing, and shooting, surely demands some effort for its proper protection (say from March 1 to August 12, the first day of grouse shooting), and preservers would do well to bear in mind that food without shelter is not sufficient to ensure the maintenance of a proper stock. In times of much rain and heavy snow, hares leave the open country and betake themselves to thick hedgerows and coverts. Hence the more accommodation there is of this kind the better for the interests of sportsmen, since the fewer plantations there are upon a sporting estate the fewer will be the number of hares. They will undoubtedly seek shelter elsewhere.

Diseases—Hares are occasionally subject to a parasitic disease, a sort of pulmonary tuberculosis, caused by the presence in the lungs and air passages of thread-worm, *Filaria pulmonalis* (*Strongylus commutatus* of some authors). A few years ago, on the Walton Hall Estate, in Yorkshire, the writer remarked that the hares were suffering from a peculiar malady which seemed to be due to an unusually wet summer. The wet "seat" attracted the flies when the animal moved, and they deposited their eggs *in ano*. Maggots were engendered, which found their way into the intestine, and caused a lingering and painful death. Numbers of hares thus affected were picked up that summer in a dead and dying condition.

The Scotch, Blue, White, or Mountain Hare (*Lepus variabilis*)—It was at one time supposed that there were three distinct species of hare in the British Islands, and in the first edition of Bell's *British Quadrupeds*, the so-called Irish hare was described and figured as differing in certain respects from the English and Scottish animals. The chief distinctions relied on were that it differed from the English hare in its shorter and rounder head, shorter ears and limbs, and in the texture of the fur, which is without the long black hairs with which the fur of the latter is in parts interspersed; while from the Scotch hare it was said to differ in never turning white in winter. This has now been proved to be a fallacy, for in the points in which it differs from the English hare it resembles the Scotch one, and the testimony of numerous observers in different parts of Ireland goes to prove that if the majority of the hares in that country do not turn wholly white in winter, as many do, they at least become partially so. In other words, the Scotch hare and the Irish hare are specifically identical. The geographical appellation, moreover, no longer holds good; for English hares have been introduced into Ireland, and hares both from Ireland and Scotland have been imported into England. In North Wales (Carnarvonshire) representatives from the three countries may be seen and shot on the same day.

The reason we do not see so many white hares in the market (except after Christmas, when more are killed and have to be got rid of) is that they are not so saleable as brown hares. Being much inferior in size and flavour, they do not command the same price, and the dealers consequently prefer to take those which are as brown as possible, that they may pass muster amongst those of the more esteemed species.

Description—Many people then would not know the difference, especially if told that some allowance must be made for individual variation. They should notice, however, the smaller size, rounder head, shorter ears and hind-limbs, and the soft woolly nature of the fur.

Colour—The variation in colour which takes place in the Scotch hare is considerable.

This depends wholly upon season; and as the change proceeds from the summer to the winter garb, every variety may be seen between blue grey and pure white.

Weight—The average weight of a Scotch hare may be set down as between 5 lbs. and 6 lbs. The heaviest ever noticed by the writer, shot in Caithness, weighed 7½ lbs. The largest Irish hare weighed 9 lbs. Good ones will weigh 8 lbs.; but a great many, probably, are little over half that size (see Harvie Brown, *Fauna of Argyll*, p. 43, footnote). It is, therefore, far behind the common hare in size and weight, for the latter has, as stated above, been recorded to the weight of over 13 lbs.

Habits—As might be supposed from the nature of its haunts, the mountain hare differs in its habits from the brown hare of the lowlands. It is given to skulking amongst boulders on the hillsides, and when pursued seldom goes far before retreating into some hole or cranny, in this respect seeking safety in hiding like a rabbit, rather than by swift flight like a brown hare. On this account it affords but little sport for the gun, and were it not for the fact that it makes excellent soup, it would probably not often be shot by those who, in pursuit of grouse or ptarmigan, have an object in reducing the weight they have to carry when climbing a steep hillside. Moreover, when a "hare drive" is resorted to, the Scotch animal affords but poor sport by comparison with "grouse driving," for, on account of its conspicuous colour and slow rate of speed, it is by no means difficult to shoot. Scotch and Irish grouse shooters, however, if they happen to be naturalists, will regard white hares with some favour, since they afford food

Mountain Hare.

for the eagles and hill-foxes, which, were it not for their existence, would take heavier toll of the grouse.

Interbreeding—Whether the brown and the white hare ever interbreed is a question that is sometimes asked, and generally answered in the negative. There are, however, cases on record which tend to prove that they occasionally do so. (See Cordeaux, *The Field*, Sept. 23, 1876, McNicol and Colquhoun, *The Field*, Oct. 7, 1876, Lumsden, *Zoologist*, 1877, p. 101, and Harting, *Proc. Linn. Soc.*, 1897.) Mr.

Common Hare.

J. G. Millais has come across several such hybrids in Perthshire, and is convinced that on the ground to which the blue hares descend from the hills and meet the lowland brown hares, such interbreeding is not so uncommon as is usually supposed. Their general similarity to one or other parent causes them to be overlooked.

J. E. Harting.

HARTEBEEST (*Bubalis caama*); *Rooi hartebeest* (red hartebeest), of the Transvaal Boers; *Khama* of the Bechuanas; *Mthluzele* of the Zulus; *Ingama* of the Makalakas; *Khama* (with a click) of the Masarwa Bushmen. This fine antelope is one of the fastest and most enduring in all Africa; its near relative the Tsesseby being probably the only antelope that can excel it in these respects. The **Cape Hartebeest**, as this animal may for convenience be called to distinguish it from several near congeners in various parts of Africa, was formerly to be found in great abundance throughout most of South Africa from the Cape Peninsula to Lake Ngami. It has never been found, curiously enough, in Matabeleland or Mashunaland. It is described by Cornwallis Harris as frequenting the plains beyond the Orange River, in his time (1837) "in immense herds," but, chiefly owing to the wasteful slaughter of the great game-slaying period—1837 to 1890—its numbers have been much reduced in many parts of the country. Still, thanks to its vigilance, wariness, and extraordinary powers of flight, the hartebeest may be found in large herds in portions of Bechuanaland, Ngamiland, and the Kalahari Desert. A few linger here and there in the parched and desolate Bushmanland country, to the north-west of the Cape Colony, just south of the Orange river. In parts of Griqualand West they still exist, and there enjoy some slight measure of protection. They are also preserved in small numbers in Natal,

and a few still remain in Zululand. To the westward of British Bechuanaland, and thence into the adjacent Kalahari, fair troops may still be found occasionally in the park-like, open forest and grass country so often to be met with in those regions. Throughout the Bechuanaland Protectorate, towards the Kalahari, and thence into Khama's country, hartebeests may yet be encountered in respectable numbers. In the more desert, westerly portion of Khama's country, in the open giraffe-acacia forests south of the Botletli River, near the various salt pans of the Ngamiland region and throughout much of the Northern Kalahari, large herds of these antelopes still roam freely. Ngamiland and the northern portion of the Kalahari desert may

CAPE HARTEBEEST.
Av. height at shoulder, 48 *in.*; *Max. horn meas.* 25 *in.*

indeed be said to be now the principal head-quarters of the Cape hartebeest. Its northern range seems rarely to extend north of the great Makarrikarri salt-pan, north of the Botletli River. The writer has within recent years found these antelopes running in large troops in the waterless "Thirstland" between Palachwe (Khama's Town) and the Botletli river, also between Khama's and the Makarrikarri salt-pan. In both cases they were to be found at no great distance from the wagon roads. In the waterless Kalahari forests, some twenty miles south of the Botletli River, they were also fairly abundant. The Cape hartebeest shares, with the giraffe, the gemsbuck, the eland, and one or two other antelopes, the faculty of being able to subsist without water, during the period of African winter, for several months at a time. This peculiarity will, without doubt, serve to postpone its extinction for many years to come.

This antelope is one of the most difficult of all African game animals to bring to bag. One seldom hears even of Boer hunters shooting many of these animals during a hunting expedition. It is found nowadays usually upon open grass plains in the vicinity of thin bush or forest, or, as in so many parts of Bechuanaland and the Kalahari, in flat grassy country amid open forests of giraffe-acacia. As a rule hartebeests will be found at the present day in troops of from a dozen to five and twenty or thirty. But, in country where they have been little disturbed, herds numbering fifty and upwards may yet be found.

The Cape hartebeest is quite one of the most remarkable of all the South African antelopes. It is a quaint, old-fashioned-looking quadruped, rather what a racing man would call "a three-cornered brute," standing high at the shoulders and sloping considerably towards the rump. An average specimen will stand four feet high at the withers, but instances have been known where the measurement has reached five feet. The legs are slender, hard as iron, clean and shapely. The general colour is a rich, bright brown-bay, varied by the black face, by dark markings upon the fore and hind legs, and by patches of yellowish-white upon the rump and quarters. The head is long and awkward-looking, the face narrow and strongly marked with black. The strong rugged horns, corrugated up to the backward curve, after rising upward, bend back suddenly, almost at a right angle; they are set upon a singularly high frontal bone. Both male and female carry horns, those of the cows being somewhat thinner and less robust than are the bulls'. The eyes, planted high up in the head, are of a reddish hue. The flesh of the hartebeest is very fair eating, and makes good "*biltong*," *i.e.* salted and sun-dried venison, much in favour among the Boers. The handsome skin of this antelope is much prized by the Bechuanas, as well as by the Vaalpens and Masarwa bushmen of the Kalahari, all of whom use it, when tanned in native fashion, with the hair partly left on, as a cloak. The bushy tail-tuft, which is of a curious reddish-black tint, is retained on the cloak and allowed to fall down the back of the wearer, just below the neck.

As a beast of chase the hartebeest stands almost unrivalled. Some of the larger South African antelopes, as the eland, kopdoo, sable antelope and others, may be run down with a good horse in favourable country. Not so with the hartebeest, which, as the writer can personally testify, can show its heels to the best Cape hunting horse ever foaled. Nor is it of the slightest use to persist in a long tail-on-end chase with the idea of wearing out these most

fleet and enduring animals if they have really taken alarm and mean to go. In its slower paces the hartebeest looks heavy and lumbering, and the novice will probably regard it as a beast not very difficult to run down. Once begin to push it, however, and the animal stretches itself out, gets its hind legs well under its belly, and covers mile after mile of veldt in wonderfully smooth, machine-like fashion. This strong and untiring gallop it seems capable of keeping up indefinitely, to the despair of the mounted hunter. I have seen hartebeests chased hard for seven miles; by which time the horses had been ridden to a standstill, while the antelopes were as fresh as ever.

If it were not for certain rather foolish traits possessed by this animal, few hartebeests, indeed, would fall to the rifle. But occasionally they will afford comparatively easy shots. These antelopes are extremely curious, and will not infrequently wheel round, if not chased too hard at first, and so afford the gunner a fair chance at reasonable distance. I have seen this happen two or three times in a single run. Or, if the leader of the troop, usually some cunning old bull, can be wounded and turned out, the rest of the herd become flustered and will run in circles and can be thus cut off. Again, if a bullet or two is planted so as to strike up the sand in front of the troop, the hartebeests will sometimes turn short back and give the hunter a fair shot. In the pleasant forest country of West Bechuanaland and the Kalahari, in which these antelopes are often found, the mounted hunter, riding quietly, is sometimes enabled, thanks to the bush and covert often afforded, to get within easy distance of them. In such country they are far more readily approached and cut off than upon the broad, open plains which they affect in parts of Khama's country and Ngamiland. The writer has headed a troop in such country in British Bechuanaland and been enabled to cut the herd right in half. The antelopes seemed confounded, and stood staring for some seconds within less than 150 yards, thus affording two easy shots. It is to be remembered, however, that the hartebeest is one of the most tenacious of life among all South African antelopes—a proverbially tough family—and that even when severely and even mortally wounded it is still capable of distancing its pursuers and making good its escape.

For shooting these antelopes a Martini-Henri sporting rifle, a ·303 Lee-Metford, a Mannlicher, or any other good modern long-range sporting rifle will be found sufficient. Very few hartebeests are ever stalked on foot, and the hunter may be strongly advised, if he is desirous of saving time and trouble, to follow the usual practice and take the field mounted on a good reliable South African hunting horse.

It may be mentioned, however, that a good many of these antelopes are shot, especially by the Boers, by night, at brack or salt-pans, of which hartebeests are extremely fond, and to which they come, with other game, to lick.

In addition to the Cape hartebeest, a number of other hartebeests, not distantly connected with this antelope, are to be found in various parts of the African continent. These are Lichtenstein's hartebeest, found in South Eastern and South Central Africa; Jackson's hartebeest, found in Central Africa; the Tora or Tetel, found in the Soudan and North East Africa;

LICHTENSTEIN'S HARTEBEEST.

Av. height at shoulder, 50 *in.*; *Max. horn meas.* 21 *in*

the Tiang hartebeest, Soudan; Swayne's hartebeest, Somaliland; the Topi hartebeest, East Africa; Coke's hartebeest, East Africa; the West African hartebeest, found in the Gambia, Niger, Cameroons and other western regions; and the Senegal hartebeest, which frequents Senegambia and West Central Africa. Besides these forms, the Tsesseby of South Africa (*Damaliscus lunatus*), often called by the Boers, the Bastard hartebeest or Zulu hartebeest, is obviously nearly allied to the Cape hartebeest. For further information on all these animals, their horn measurements, and habitats, &c., the reader may be referred to the *Book of the Antelope*, by Oldfield Thomas and P. L. Sclater, and *Records of Big Game*, by Rowland Ward.

H. A. BRYDEN.

HERON—As an object of sport the great grey heron (*Ardea cinerea*) has come to be almost forgotten. There was a time, and that within memory of those still living, when heron-hawking was practised by an English falconer, who died in his sixty-second year no longer ago than 1871. This was the late Edward Clough Newcome, of Hockwold in the county of Norfolk. His hawking career commenced about 1827 or 1828, when, as a boy of 17 or 18, he used to go out with Colonel Wilson of Didlington, who succeeded Lord Orford as chief of the Norfolk falconers. The heron-hawks were then kept at High Ash in charge of some Dutch falconers, and the "meets" were, according to the wind, at High Ash, Mundford, Cranwich Barn, Northwold Field, and Methwold Field. The heronry at Didlington was in those days surrounded by open country on every side, and the herons used to go out in the morning to the fens as well as to rivers and ponds at a considerable distance in search of food, returning to the heronry towards evening. It was at this time (as described by Sir John Sebright) that the falconers placed themselves down wind of the heronry, so that when the herons were intercepted on their return home, they were obliged to fly against the wind to gain their place of retreat, and a fine ringing flight was then usually obtained. If the heron flew down wind, it was seldom taken; the hawks were in danger of being lost; and, as the flight was in a straight line, it afforded little sport.

HERON.

In 1838, after the death of Colonel Wilson (who in 1832 had become Lord Berners), Mr. Newcome, with the Duke of Leeds, Mr. Stuart Wortley and Baron d'Offémont, helped to found the celebrated Loo Hawking Club, whose head-quarters were at the Loo near Apeldoorn, the summer palace of the King of Holland, under whose patronage and with whose consent the members met every summer for about six weeks' heron hawking. The following extract from the archives of the club shows the number of hawks (peregrines and gerfalcons) maintained by the members, and the number of herons captured by them between 1840 and 1852:—

1840—22	Falcons	138	Herons
1841—44	,,	287	,,
1842—44	,,	148	,,
1843—40	,,	200	,,
1844—36	,,	100	,,
1849—14	,,	128	,,
1850—16	,,	138	,,
1851—18	,,	130	,,
1852—36	,,	297	,,

When taken uninjured, the herons were often liberated, after having a brass ring fastened on one leg inscribed with the name of the club and the date of capture. They were sometimes retaken at long intervals at a considerable distance from the Loo. In 1856 one of them was killed near Perpignan, having a ring on its leg which it had carried for seven years.

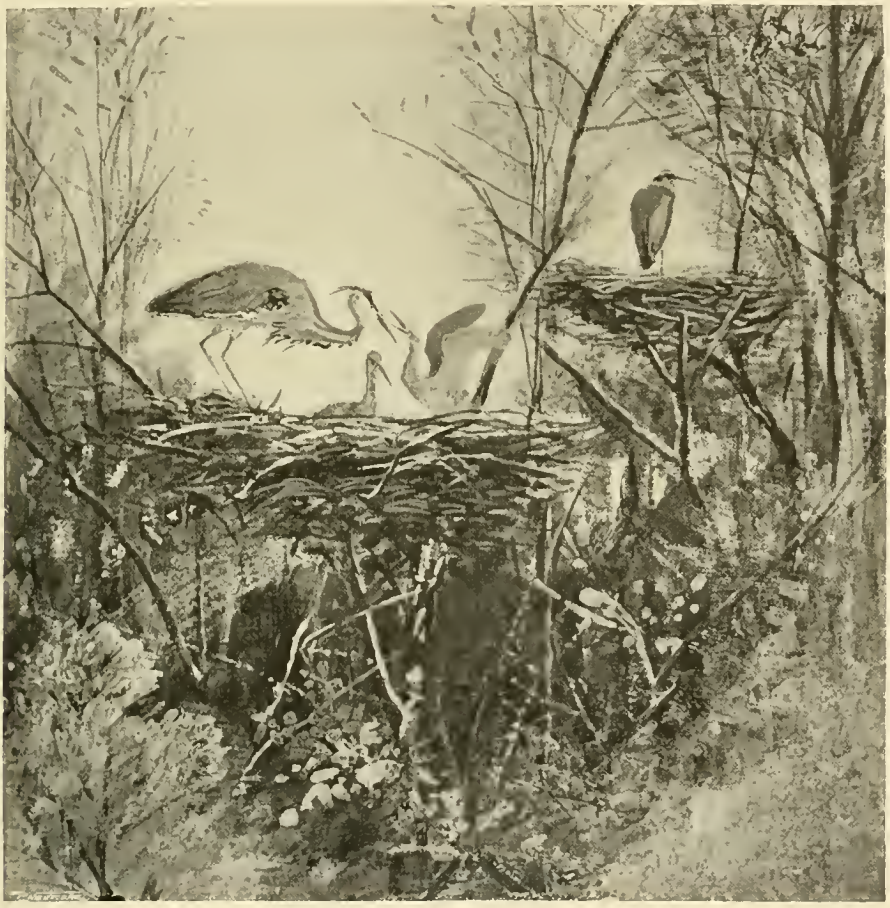
Mr. Newcome was the last falconer who kept heron-hawks in England, and an interesting account of two remarkable birds which he possessed, named "Sultan" and "De Ruyter," will be found in Freeman and Salvin's *Falconry* (1859). They were brought from Holland by the Dutch falconer Jan Pells, and in their first year took fifty-four herons, and in the following season fifty-seven.

But although the heron from various causes no longer serves as a quarry for trained falcons, it is still an object of some solicitude on the part of wildfowlers, not because it is reckoned of much account for the table—although formerly it was held in some estimation and was served up at city feasts together with cranes, bustards, and shovelards—but on account of its extreme wariness. Its long neck and long legs enable it to keep so sharp a look-out above the sedges or other aquatic herbage amongst which its great

body is often partially or entirely concealed, that it usually requires all the skill of a deer-stalker to approach it within gunshot, the difficulty being of course increased when the bird is out on an open marsh, on the seashore, or fishing on the extensive mudflats of a tidal harbour.

By anglers the heron is regarded as a deadly foe, though it would be fairer to regard it merely as a rival. It has to get its living chiefly, though not entirely, by fishing, and its instinct naturally prompts it to seek the fish where it has the best chance of capturing it, namely, in shallow water. For this reason it is not surprising that it should visit the shallows of a trout stream, or the bed of a pool which is not too deep for wading. In such places no doubt the heron takes certain toll of such fish as come within reach of its long-pointed beak, but it varies its fish diet with frogs, water-rats, and the young of water-fowl, such as moorhens, coots and wild ducks, to an extent which should relieve it from the objurgations of anglers. When we consider the extraordinary fecundity of most fishes, the extreme rapidity of their movements in their own element, and the comparative infrequency with which they can be struck by the bird's beak (we have repeatedly seen a heron miss its mark) we should not be disposed to grudge it the meal which eventually rewards its skill and patience.

Considering its large size, most apparent when on the wing, at which time it looks fully as large as a wild goose, its weight is insignificant. An adult heron will weigh $3\frac{1}{2}$ lbs., a bean-goose $7\frac{1}{2}$ to 8 lbs., and a grey lag 9 to 10 lbs.



NESTING TIME WANSTEAD PARK)

The length of an adult heron is about 3 feet 4 inches to the end of the tail. One of the most remarkable points in its life history is the circumstance of its congregating in the breeding season to nest in colonies, like the rook, on the tops of tall trees, or in cliffs overhanging a river, as is the case on the Findhorn. That so large a bird, with such long legs, and toes formed for wading rather than for grasping, should select the slender branches of an oak or wych elm, on which to construct a ponderous nest of twigs, is sufficiently curious; but the habit is no doubt a precautionary one for safety during the time

the young are helpless in the nest. Where tall trees are absent and the herons are not molested, they sometimes make them on or near the ground, at times on dwarf bushes—as on a small island in Lough Clinn, co. Kerry, where the nests, on hollies and mountain ash, are built so low down that they may be almost reached by standing up in a boat—or amongst reeds as at Tollesbury, in Essex, where they were formerly numerous.

Occasionally, when seeking to establish a new colony, herons will attempt to take forcible possession of a rookery, and pitched battles between the two species will last for several days. A notable instance of this occurred at Dallam Tower, Westmorland, where a grove in which herons built having been cut down, the herons endeavoured to effect a settlement in a neighbouring rookery. The rooks opposed this invasion, and desperate battles ensued. Many of the rooks were killed and some of the herons lost their lives; but the latter succeeded in holding some of the trees, and harmony was at length restored.

Modern statistics seem to show that heronries in Great Britain, instead of decreasing in number as some writers suppose, are really on the increase, and this in spite of the persecution to which the birds are subjected at the hands of the fish preservers and holders of a ten shilling gun license.

In James the First's time an Act of Parliament (1 Jac. I. cap. 27. sec. 7) made it illegal to shoot with any gun within 600 paces of a heronry; no one beyond his own ground might kill or take a heron except by hawking or with the long bow under a penalty of *6s. 8d.* for every bird so killed or taken, and no one might take a young heron from the nest under a penalty of *10s.* (19 Hen. VII. cap. 11. sec. 1). The eggs of herons, bitterns, and spoonbills (shovelard) were protected (25 Hen. VIII. cap. 11. sec. 5), and it is worthy of note that in those days there was a heronry in the Bishop of London's park at Fulham in which spoonbills were also nesting. For a full account of this interesting circumstance the reader may be referred to the *Zoologist* for 1886, pp. 81–88. But these statutes were repealed by what is now known as the principal Game Act of William IV. (1 and 2 Will. IV. cap. 32), and while the legal protection once afforded to these birds was withdrawn, the means for their destruction increased by the improvement in guns, which added to the number of shooters. Notwithstanding these facts the birds themselves have not (like the crane and the bustard) ceased to breed in the British Islands, nor have our British heronries materially decreased. This is probably due to the fact that although many more people use shot guns than was formerly the case, they use them for fowl which are better worth their notice, and, in the case of professional gunners, command a higher market value.

Some years ago, by means of a published circular, the writer collected a considerable mass of information relating to heronries existing in the British Islands (*Zoologist*, 1872). No less than 130 were noted for England and Wales, seventy for Scotland, and forty-nine for Ireland. In a subsequently published appendix (*Zoologist*, 1873), twenty more were added for England and Wales, two for Scotland, and three for Ireland, and twenty-six further additions in subsequent numbers of that journal made a total of about 300 in the United Kingdom.

From these statistics the list of British heronries given in Yarrell's *British Birds* was revised, and omitting the details which had been collected as to the kind of tree on which the nests were built, the number of nests, ownership, and so forth, the following list will serve to show approximately the present distribution of heronries throughout the country.

BERKSHIRE—Windsor Great Park; Coley Park, Reading.
BRECONSHIRE—Senny Bridge; Hay.
CAERMARTHENSHIRE—Neuadd-fawr, Cilcwn, near Llandovery.
CAMBRIDGESHIRE—Chippenham Park.
CARDIGANSHIRE—Gorgerddan.
CARNARVONSHIRE—Vaynol Park, near Bangor.
CHESHIRE—Aston Hall, near Frodsham; Tabley Park, Hooton-on-the-Mersey; Eaton Hall, near Chester, and Burton Hall.
CORNWALL—Lamorran, near Truro; Fowey; Trenant Wood.
CUMBERLAND—Greystoke; Wythrop Woods, near Bassenthwaite; Gobay Park, and Edenhall, near Penrith; Eamont River, below Ulleswater; Muncaster Castle.
DENBIGHSHIRE—Vorlas Hall.
DERBYSHIRE—Kedleston, near Derby; Eaton Wood, near Uttoxeter; Sutton Scarsdale, near Chesterfield.
DEVONSHIRE—Powderham Castle, near Exeter; Sharpham, on the Dart; Warleigh, on the Tamar; Bellever, Dartmoor; Fremington, near Barnstaple; Shute Park, near Axminster; Pixton Park, near Dulverton.
DORSETSHIRE—Brownsea Island, near Poole; Upton, near Wimborne; Bryanstone Park; Admiston Hall, Kingston Lacy; Sherborne Park.
DURHAM—Ravensworth Castle; Sands, near Sedgefield; Gainford; Wycliffe.
ESSEX—Wanstead Park; Lieut.-Col. Tufnell-Tyrrell's, near Chelmsford: Chest Wood, Layer de la Haye; St. Osyth Priory.
FLINTSHIRE—Bodryddan, by St. Asaph,
GLAMORGANSHIRE—Hensol Castle; Margam Abbey Penrice Castle.
HAMPSHIRE—Heron Court; Vinney Ridge, New Forest; Wolmer Forest.
KENT—Cobham Hall; Penshurst Park; Chilham Park, near Canterbury.
LANCASHIRE—Ashton Hall, near Lancaster; Claughton Hall, Garstang; Rigg's Wood, near Garstang; Scarisbrick Hall, near Ormskirk.
LINCOLNSHIRE—Skillingthorpe Wood, near Lincoln; Swanpool; Evedon Wood, Haverholme Priory, near Sleaford; Manby, near Brigg.
MERIONETHSHIRE—Talgarth Hall, Machynlleth: Rüg, near Corwen; Glyn Hall.
MIDDLESEX—Osterley Park.
MONMOUTHSHIRE—Pantygoitre; Court Blethyn; Treowen, near Monmouth.
MONTGOMERYSHIRE—Peniarth.

NORFOLK—Gunton ; Didlington ; Earlham ; Mautby ; Wolferton Wood, near Castle Rising ; Kimberley ; Old Buckenham ; Burnham Overy ; East Walton ; Taverham Hall, near Norwich ; Stokesby, near Acle ; Westacre ; Billingford ; Holkam, Strumpshaw, near Brundall.
NORTHAMPTON—Althorpe ; Milton, near Peterborough ; Bulwick.
NORTHUMBERLAND—Chillingham Park ; Harbottle Castle, Upper Coquetdale ; Bolam Lake, near Wallington ; Redewater ; Unthank, South Tyne.
NOTTINGHAM—Clumber Park ; Colwick Park ; Thoresby Park.
OXFORDSHIRE—Far Wood, Southleigh.
SHROPSHIRE—Altingham ; Ellesmere ; Plowden ; Halston ; Oakley.
SOMERSETSHIRE—Picton ; Knowle House, near Dunster ; Halsewell, near Bridgwater.
STAFFORDSHIRE—Swithamley ; Trentham ; Betley.
SUFFOLK—Cavenham ; Chippenham ; Henham Hall ; Friston, on the Orwell ; Orwell Park.
SURREY—Cobham Park ; Ashley Park, Walton-on-Thames ; Richmond Park.
SUSSEX—Windmill Hill, Hurstmonceaux ; Sowden's Wood, Brede, Parham Park.
WARWICKSHIRE—Warwick Castle ; Coombe Abbey ; Ragley Park, near Alcester.
WESTMORLAND—Dalham Tower ; Rydal Lake ; Ingmire Hall.
WILTSHIRE—Bowood, near Melksham ; Longleat, near Bath ; Longford Park, near Salisbury.
WORCESTERSHIRE—Wedgwood Park, near Droitwich.
YORKSHIRE—Kildale-in-Cleveland ; Newton Hall, near Malton ; Harewood Park, near Leeds ; Eshton Hall, near Gargrave ; Browsholme Hall, near Clitheroe ; Nostell Priory ; Morby Park, near York.

In Scotland there are comparatively few large heronries, but the small ones are so numerous, that for a list of them the reader must be referred to the sources of information above indicated, where also will be found particulars respecting many of the colonies in Ireland.

In the case of a species so generally distributed there should be surely no excuse for not "knowing a hawk from a hernshaw!"

J. E. HARTING.

HIGHLAND GATHERINGS AND GAMES—Highland games are often held in the midst of most romantic scenery, and offer a very pretty contrast to the sombre and business-like surroundings of a town athletic meeting. What matter if the running path in the North is often only a moderately level grass-grown spot of irregular shape, with sudden acute-angled corners that would fill the heart of an Oxford or Cambridge president with a sense of the liveliest dismay? One such is at Glenisla, held under the shadow of Mount Blair, 2,400 feet high, with the river Isla meandering in front, where the "going" is indifferent, and where a mile in 5 min. 5 sec. is really fast time. But at local countryside gatherings there is not much interest taken in the running competitions, unless there is a hill-race—such as we have also in Cumberland and Westmorland — where local stalkers, shepherds, keepers, and the like have a better prospect of victory than the professional sprinter.

It is where the features peculiarly Scottish have been preserved that the interest and excitement come in, and the men with rough plaids on their shoulders, and the lasses with gay tartan shawls, that do double duty both for umbrella and cloak, flock to witness with absorbing attention the "foursome" reel dancing, or the Highland "fling," the bagpipe-playing, "tossing the caber," and the award of the prizes for the best-dressed "Hielandman" on the ground.

Amongst these events peculiarly Scottish, **Tossing the Caber** certainly requires a few words of explanation to southern ears. A "caber" in the Gaelic is a straight rod or wand. So a "caber slait" stag has a head without the bristling points and cups that adorn his fellows; *his* horns go up straight and plain above his brow antlers, for all the world like those of a big cow. The "caber" in the present juncture is a straight, tapering pine tree, 16 to 20 feet long, with all its branches lopped off close to the trunk, in appearance not unlike a telegraph pole, though more roughly trimmed and more unkempt. The "tosser" has the caber raised for him by others into an upright position—thin end downwards and resting on the turf. Stooping down, with his shoulder and one foot firmly against the caber, he raises it gingerly from the ground with the thin end between his two hands until it is nearly, if not quite, level with his elbows, and proceeds forward. At first he goes quietly, feeling cautiously for his balance. Gradually getting his pace up, as he feels that it is now balanced, with the weight well and properly set against his shoulder, he takes a good run forward and tosses the caber upward, forward, and away from him. It should turn a complete "Catherine wheel," striking the ground truly with the thick end, not falling quaveringly away to the right hand or to the left, but turning right over so that it may lie with the heavy end nearest him and the thin end right away.

The caber is often too good for the performers: in fact, it is the custom at many gatherings to bring it on to the ground too large at first for successful operations, and cut it down in length gradually till it comes within the range of practical politics. It is, of course, essentially a strong man's feat, though long practice and great dexterity too are required to get the balance right, as the forward movement is being initiated. No one could touch the great Donald Dinnie at his best in this particular sport. His height—6 ft. ½ in.—was much in his favour.

Bagpipe-playing — The name of great pipers is legion. The post of piper to the chief of a clan has long been a most honourable position, and in some cases the place has descended for generations from father to son. The Macrimmons, hereditary pipers to Macleod of Macleod, and the MacArthurs, pipers to Mac-Donald of the Isles, are historic instances. The

last of a long line of Macrimmons died in 1822.

Reel Dancing, Highland Flings, and Sword Dance—The national dances, accompanied as they are by the national music, form the most picturesque feature of a Scottish gathering. Prize dancing, to be good, should not show the laborious, affected, and machine-like regularity of a music-hall clog dancer. The more graceful, natural, and easy the movement is, the more do our sympathies go out with the dancer. Drilling and practice are good, but natural aptitude is more. Lissom grace, with natural aptitude, is able to conceal the real strain and stress of the movement. A spectator should not be able to judge of the exertion actually involved, either by the agonised countenances, the muscular contortions, or the heavy, cow-like capers of the performers.

John MacNeill, sen., of Edinburgh, was the best all-round dancer of his time, whether in reels or flings. James Paton, the great athlete, was, for a big man, the most graceful of his fellows in the dance. John Cumming, Tarland, may be quoted as a model reel dancer. These and many more were public characters, but it often happens that a really first-class dancer does not travel beyond his own country and his own local gathering.

Putting the Stone and **Throwing the Hammer** are more interesting to Scottish athletes than to English. They have taken great pains with these feats, and have arrived at great results. Unfortunately, in Scotland there are three different styles of "putting" practised—the ordinary, the Braemar, and the Border style. So that when we come to test good individual performances, and endeavour to place them in order of merit, we are confronted with this difficulty, that they were not, and are not, undertaken under the same conditions. The curious should consult a capital little book, *The Athletes and Athletic Sports of Scotland*, by W. McCombie Smith, Esq. (F.S.A., Scotland), published by A. Gardner, 26 Paternoster Square, London. It is written by the acknowledged authority on these sports in the North, and the writer of this article is deeply indebted to him for putting all his abundant materials in the kindest manner at his disposal.

The standard weights of the stone are 22 and 16 lbs. The hop or run is generally limited to 7 ft. 6 ins., and the ground is most indifferently level. Of the weapon used, the stone itself, Mr. Smith writes: "A smooth round stone at Inverness, a rough-surfaced iron ball at Luss, and a lead ball, with indentations for the fingers, at Aboyne." This triple description alone opens out a wide field for variety of performances.

Famous "putters" up to date are Donald Dinnie, G. Davidson, O. Duffy, James Fleming, J. George, K. Macrae, J. D. MacPherson, J. and W. Tait, and G. Perrie, Lanark. Donald Dinnie has the following records with the stone of 22 lbs. weight—42 ft. 3 ins. at Dunkeld; 39 ft. 9 ins. at Coupar Angus, 1868. With the 16 lb. stone 45 ft. 7 ins. at Aboyne, 1867; and 49 ft. 6 ins. Perth, 1868 (private practice); while James Fleming has 44 ft. 9 ins. with 22 lbs. at Dunkeld. The Dunkeld ground is allowed, even by its admirers, to have been "far from level," which, being translated, doubtless means "sadly downhill." The best genuine and authentic "putts" last year were made at Pitlochry, September 5, on a ground above suspicion. G. Perrie, Lanark, put the 22 lbs. ball 37 ft. 5 ins., and the 16 lbs. do. 44 ft. 8 ins.

Throwing the 56 lb. Weight is not much practised, but is perhaps just worthy of mention. D. Dinnie, George Davidson, and G. M. Ross have all thrown it over 28 ft.; Ross, at Pitlochry, September 10, 1892, threw it 29 ft. 1 in.

Throwing the Hammer—Here again there are differences of Scottish style, and undoubted discrepancies in the weight of the hammer, and in the length and flexibility of the handle. At the standing, or Scottish style, Donald Dinnie was the best thrower on record. After him came George Davidson and Kenneth Macrae, who were hard pressed by G. Johnstone and Alexander McCulloch. In 1896 G. Johnstone was *facile princeps*. Donald Dinnie threw a 16 lbs. hammer, standing style, at Coupar Angus on level ground 132 ft. 8 ins., but it had an abnormally long handle. George Johnstone, with the improved 1890 handles, has the best on record at Aboyne, 83 ft. 4 ins. with $24\frac{3}{4}$ lbs. hammer, and 111 ft. 3 ins. with $16\frac{1}{2}$ lbs. hammer. The same athlete at Pitlochry, September 5, 1896, threw the 22 lbs. standard hammer 92 ft. 2 ins., and the 16 lbs. hammer at Stirling 119 ft. $\frac{1}{2}$ ins. Kenneth Macrae has thrown 120 ft. 6 ins. with the Inverness "light" hammer.

Running—Of course on rough grass-tracks, like Glenisla, fast times are not to be expected. At town meetings, not "gatherings," W. Cummings, Paisley, has held the mile record for a while, and still holds the ten mile record, 51 min. $6\frac{3}{5}$ sec., without ever having been driven along to do his best. P. Cannon, Stirling, has the four mile record with 19 min. $25\frac{2}{5}$ sec., and the three mile record 14 min. $19\frac{1}{5}$ sec.

High Leaping and Long Leaping—On ground nearly, if not absolutely level, the following have cleared 5 ft. 11 ins.: Donald Dinnie, James Methven, Fife, and Andrew Milne, Forfarshire. Tivendale, Fife, claims 6 ft. 1 in. at Cupar, 1861, and Hugh Andrews the same at Alva, 1881. J. W. Parsons, the Scottish amateur, has 6 ft. put to his credit.

Long Leaping—Here, too, authentic records are spoiled by the gathering grounds being seldom level. On Leven Links, with the run obviously downhill, Carruthers has cleared 23

ft. 6 ins. J. W. Parsons, again (amateur), did 23 ft. ¼ inch, L.A.C. Meeting, 1886.

Hop, Step, and Leap—This, like tossing the caber, is distinctly a Scottish feat. Great performers, such as S. Muir and A. Bower of Old Meldrum, do 45 to 48 ft.

Scotch wrestling is in a heterogeneous and disorganised condition.

In conclusion, so far as competitions and careful arrangements go, Bridge of Allan, Luss, and Aboyne are perhaps the best conducted of the gatherings.

E. Lennox Peel.

Hippopotamus.
Av. height at shoulder, 44 ins.

HIPPOPOTAMUS (*Hippopotamus africus*)—Huge unwieldy beast as he is, slow of movement, and without special means of defence or a superabundance of intelligence, the Hippopotamus has yet held his own against his human foes during the present century—terribly destructive as that period has been to animal life in every quarter of the globe—better than any other beast whose hide or flesh is useful to man. Even the last thirty years, which have witnessed the complete extermination of the millions of shaggy bisons which once roamed the great prairies of North America, and which have changed into a dead world (zoologically speaking) the vast wastes of Southern Africa, which, when first visited by Europeans, were tenanted by innumerable herds of wild animals, have made but little difference to the range of the Hippopotamus, whose loud trumpeting bellow may still be heard on every lake or river of any size from the upper waters of the Nile to the bay of St. Lucia in Zululand. A few yet linger in the lower reaches of the Orange river, and also in the St. John's river in Pondoland, whilst a small herd, which is now protected, finds an asylum in an inland lake not far from the Ungeni river, in the colony of Natal. In the lower Limpopo the Hippopotamus is plentiful, and it is to be found also in greater or lesser numbers in every stream, where the conditions are favourable to its existence, between that river and the Zambesi, and from thence throughout the whole of Central, Eastern, and Western Africa, ranging northwards on the west to the confines of the waterless Sahara, and on the east to the upper cataracts of the Nile. Thus the Hippopotamus seems likely to be able to maintain itself for centuries to come in the vast rivers and swamps of Africa, and bids fair to outlive as a wild animal both the elephant and the rhinoceros.

In 1893 a considerable number of Hippopotami inhabited the deep pools of the upper Umzingwani river, some forty miles south of Bulawayo. These animals had been protected

for many years, both by Lo Bengula and his father Umziligazi before him, but, to the shame of our race be it said, no sooner were the Matabele conquered and their country thrown open to Europeans, than certain white men destroyed nearly all these animals, which had been rendered tame by long protection, for the sake of their hides. A small herd was also protected by Lo Bengula in the Umzuza river, within twenty miles of Bulawayo, and these animals are strictly preserved.

Although the African and Asiatic elephants and rhinoceroses differ considerably from their prototypes of pleistocene times, the Hippopotamus of the present day appears to be identical in structure with the animal whose fossil bones have been discovered in the caves and river beds of Southern Britain, and which must have been an inhabitant of that country at a very remote period of the world's history, probably anterior to the glacial period, for during and subsequent to that time the English climate would hardly have been suitable to his requirements.

In Africa itself the Hippopotamus must have existed for countless ages of time, for I have seen places in the lower Umfuli river, in northern Mashunaland where these uncouth beasts have worn paths some three or four inches deep in the solid bed of rock, through the centre of which the river has worn a deep channel. Over these beds of rock the Hippopotami have walked night after night, always on the same trail, until little by little their soft spongy feet have worn a deep track in the hard metamorphic rock. A fresh Hippopotamus track made in soft muddy ground is some two feet in width with a little ridge in the centre, as, unlike other animals, Hippopotami do not cross their feet in walking, but move the front and hind foot on each side in parallel lines, thus producing two paths, or rather one broad path with a slight ridge in the centre. The paths cut in the rock beds of the Umfuli river show the ridge in the centre as plainly as paths made but yesterday in soft ground.

In following the course of a river in a wild uninhabited part of Africa, the European traveller will often have reason to thank the Hippopotami for the broad paths they have tramped for him to walk along. These paths will sometimes lead right across country for several miles from one bend of a river to another, and in broken country will be found winding up and down steep hill sides, or piercing dense jungles or beds of reeds on the level ground. The same paths are kept open and used year after year, and it may be fairly said that the Hippopotamus is the only animal capable of making a track that it is comfortable to walk along in the interior of Africa; as his only rival, the native, makes a path which exasperates a European, being not only so zigzag, that in a jungle you very often cannot see a man three yards in front of you, but also so narrow that you cannot walk in it without crossing your feet.

Hippopotami are strictly nocturnal in their habits, never leaving the water to feed until after dark. Their food consists of reeds and grass, and as their huge stomachs can hold a good part of a haystack, they often wander far to obtain the requisite amount of nourishment; more especially during the rainy season, at which time I have seen their tracks more than a mile away from the water.

Before daylight they are all back again in the river they frequent, and during the daytime they lie lazily floating about in the water, or else bask like huge pigs on the tail of some island; some lying on the dry sand, others half immersed in the water, and others again with just their heads showing above the surface.

Hippopotami consort together in herds or families of from four or five to twenty or thirty in number, and in one portion of the Lower Zambesi below the gorge of Kariba, I once saw over 100 of these animals in several distinct herds, but scattered over a distance of less than a mile of river. The old bulls are often met with by themselves, and these old fellows, as well as cows with very young calves, are sometimes very savage, and will on occasion attack with great fury a boat or canoe which incautiously approaches them. Once, when travelling on the Upper Zambesi, I had a canoe capsized in deep water by a Hippopotamus cow with a small calf, and lost ivory and other things to the value of £60 through the accident.

It is by no means easy to shoot Hippopotami in a large river like the Zambesi, as not only are they in all probability pretty wary, through having been more or less molested by the natives, but the great breadth of the river enables them to keep out of the hunter's way. Again, it is by no means easy to hit the small mark presented by the vulnerable portion of a Hippopotamus's head (which is only shown above the water during the few seconds of time during which the animal is taking breath) from a rickety native canoe. Should the poor animals be found, as is often the case, in the pools of a small and narrow river, where they are always well within shot from either bank, they are easily destroyed, and in such cases, unless their flesh is required for food, to kill them is mere slaughter with no element of sport in it.

African natives who possess firearms seldom attack Hippopotami in the daytime, as experience has taught them that they cannot shoot accurately enough to hit so small a mark as the vital part of a Hippopotamus's head, which is usually all that can be seen of these animals when they are in the water, as they almost

always are in the daytime. They therefore lie in wait for them at nights, and as the unsuspecting animals graze past them, put a heavy bullet into their great round bodies at close range. If the bullet is well placed and reaches the heart or penetrates both lungs, the stricken beast rushes back to the river, but only to die, and his carcase is found floating on the surface of the water the following morning. Should the bullet not be well placed, the wounded animal will probably recover, and for every Hippopotamus that is killed by the natives by night shooting, a good many doubtless escape with wounds which do not prove fatal. Where the natives have no guns, Hippopotami are usually either attacked in the water with harpoons to which long lines are attached, or caught in pitfalls; but the most deadly method which I have ever heard of to compass the destruction of these animals was one which I saw practised many years ago in Northern Mashunaland, when a whole herd was starved to death in a pool of the Umniati river.

To accomplish their object, a whole tribe of Mashunas, men, women, and children, had co-operated, and having found a herd of Hippopotami in a deep reach of the river some 150 yards in breadth by 300 in length, they had fenced it in—the river both above and below the pool running in shallow channels amongst large rocks—and by keeping up fires all night and beating tom-toms had prevented the animals coming out to feed.

When I arrived on the scene there were eight starving animals lying huddled together on a submerged sandbank in the centre of the pool, and two swimming about vainly seeking a place of exit, with assegais in their backs, whilst two which had died of starvation or of assegai wounds, were being cut up on the edge of the pool, and the meat of many others hung drying in festoons on the trees around. In a few more days the survivors must all have died, as the natives said that they had not eaten anything but water for three weeks, and thus a herd of nearly twenty Hippopotami were done to death. The destruction of these animals, however, supplied a whole tribe with a quantity of much required food, and was to my mind not so reprehensible as the slaughter of the Hippopotami in the Umzingwani river near Bulawayo by white men for the sake of their hides alone in 1894.

The meat of the Hippopotamus is most excellent, at least in those parts of Africa where the altitude above the sea level renders the climate rather temperate than tropical, and where the winter nights are cold and frosty. It has a flavour of its own something between beef and pork.

During the rainy season, when the feeding is rich and plentiful, Hippopotami get into high condition, and besides developing much inside fat, put on a layer of blubber between the skin and the flesh, which sometimes covers the whole body to a thickness of an inch or even more. When in this condition I would rather have a piece of meat cut from the ribs of a young Hippopotamus cow, and roasted on a forked stick over the camp fire, than the best piece of meat that England could offer me. Good, however, as is the meat of a fat Hippopotamus cow, an old bull is to be avoided as an article of diet, should any other kind of meat be obtainable, as he is sure to be both lean and tough.

As Hippopotami are almost always killed by Europeans by brain shots, no rifle could be more suitable for their destruction than the newly invented small-bore military rifles, with solid bullets; and the most deadly spot to hit is the root of the ear, if the animal is either facing sideways or looking half away. Should a Hippopotamus be facing directly towards one, it will be found easier to hit than kill him, and it will therefore be advisable to wait for a better chance. In conclusion, let me say that although the African traveller or hunter may often find it necessary to kill Hippopotami to supply himself and his large native following with meat, he will, I think, soon realise that there is little sport to be got out of killing them, and will therefore soon learn not to molest unnecessarily these usually inoffensive beasts; for, once they have disappeared from an African river, the scenery has lost one of its greatest charms for every lover of nature.

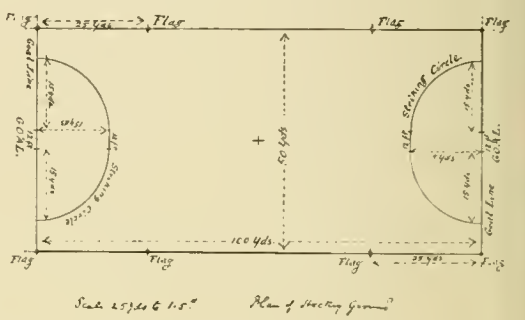
F. C. Selous.

HOCKEY—History of the Game—The game of hockey as now played may be considered to have originated in the year 1883, the first attempt to establish the game under a definite code of rules being successfully undertaken by the Wimbledon Club in that year. The game had of course existed in various forms for a very long time, but how long no one can well say, as there do not appear to be any records preserved. In Ireland it was long known as Hurley, and in Scotland as Shinty. In England it was played a good deal round London in the seventies, but seems to have died out for some years before the Wimbledon Club was formed in 1883. Since that date it has prospered and developed to such an extent both in the number of clubs all over the country and in the skill displayed in the game, that players of twelve or fourteen years ago, who have given up their interest in the game, would scarcely recognise it now. Combination was then a thing unknown. The side consisted, it is true, of the same number of players, viz., eleven, but of these eight were forwards, two so-called half-backs, and a goalkeeper. The disproportion between attack and defence seems absurd, but the game then consisted almost

entirely of scrimmages between the two sets of forwards varied by occasional individual dribbling which the half-backs generally proved equal to checking. As the idea of combination developed, the number of backs was increased, making the proportions more equal. First a third half-back was introduced. After that one of these three was placed behind the other two as a back. Next the forwards were reduced to six, the half-backs again numbering three, and finally a second back was added, making the numbers of attack and defence practically equal, the forwards numbering five, with three half-backs, two backs and a goalkeeper. This arrangement of the side did not become general until the season of 1889–90, so it will be seen that the changes mentioned were only gradually introduced, but they have undoubtedly conduced to the improvement and development of the game.

The Hockey Association was formed in 1886 and from that date has been the recognised authority for the control of the game. In the North of England the game was not taken up until the year 1887, and for some years it was confined to Manchester and Liverpool and the neighbourhood. At the present time, however, it is spreading fast in Yorkshire and the other Northern counties. The Northern Counties Hockey Association was formed in the winter of 1889–90, but has always been under the control of the Hockey Association. Most of the counties in which the game is played have their own associations, which are affiliated to the Hockey Association, but they exist for little more than the arrangement and control of inter-county matches, and the details connected with them. Ireland has taken up the game in the last few years, as well as Wales, and international matches first took place in the season 1894–95, Ireland playing England and Wales. These matches have now become regular fixtures. Wales has not yet encountered England, as the game has not yet made enough progress in the Principality. The oldest clubs in the South of England are Wimbledon, Molesey, Surbiton, Teddington, and Ealing, and in the North, the Western (Eccles), Didsbury, Bowdon, and Kersal.

Conditions of Play—The game is played on a ground 100 yards long and 60 yards wide. The width may vary from 50 to 60 yards, but it has been found that the full width allowed conduces to the best game. The goals are 12 ft. wide and 7 ft. high, and should always be fitted with goal nets, which prevent any disputes as to whether a shot has gone between or outside the posts. Fifteen yards in front of the goal a line parallel to the goal-line is marked, also 12 ft. long, and from each extremity of this line, taking each goal post as a centre, is described a segment of a circle terminating at the goal-line. This constitutes what is, roughly speaking, a semicircle in front of the goal, and the attacking side cannot score a goal unless the ball was last hit by one of them inside this line. The object of this is to prevent a goal being scored by indiscriminate hitting from any part of the field. The game is started by what is called a bully in the centre of the ground. The centre forward on each side strikes with his stick, first the ground, then his opponent's stick thrice, after which proceeding the ball is in play. When the ball is driven over the goal-line by one of the attacking side, a bully takes place 25 yards from the goal-line in a direct line from where the ball passed over it. When a defending player hits the ball over his own goal-line, or the ball glances off him or his stick and



goes behind the line, the penalty is a corner hit. This is a free hit by the attacking side from the corner flag, usually hit by the outside forward or a half-back, whilst the other forwards range round the circle line. The defending side must stand with feet and sticks behind the goal-line until the ball is hit, when they may run out. The attacking side cannot score a goal from a corner hit, unless the ball has been first stopped dead on the ground, or been touched by one of the defending side. A penalty bully is given for deliberately unfair play by the defending side in their own circle. It consists of a bully between the offender and any one player of the attacking side. The rest of the defending side must stand behind their goal-line, and the rest of the attacking side may range round the circle, but neither side may enter the circle or play the ball until it has been hit outside the circle again by one of the players taking part in the bully.

The Players—Of the five *forwards* the most important is of course the centre forward. He is the connecting link between the two sets of wing players, and is responsible for the combination of the front rank as a whole. He should be a fast and thoroughly unselfish player and a first-rate shot at goal. He must always be careful to keep his place, or he will interfere with his wings. His passes to the other forwards are of two kinds, the short pass to either of the inside wing players, or the long pass well forward to the outside men. He must use his

discretion which to employ, but he is always safer in passing out hard to the outside man when near his own goal. On the other hand he should not do so when approaching his opponents' circle, the only exception being when the inside forwards cannot get an opening and the outside men are left unguarded. In shooting at goal he should be able to put in a good shot from a pass, without waiting to stop it first. The shot will go harder, and the goalkeeper has less time to note the direction from which the ball comes. This rule will apply to all the forwards, and countless goals are lost by stopping the ball first, and then trying to shoot. By that time it is more likely than not the backs will have deprived the forward of the ball. These flying shots may not always be accurate, but more opportunities are gained for scoring, and some of the shots are sure to be successful. The inside wing players should be considered as partners of the outside men, and are responsible for their getting proper opportunities. Nothing is prettier than a combined run of two wing players passing and re-passing to each other. The inside men should always try to pass well forward to the outsides so as to allow the latter, who should always be fast men, to get well into their stride before taking the ball. They should try and draw the opposing half-back away from the outside men before passing, and if they are successful in this, the way is cleared for a good run down the ground. Inside forwards should not pass out too much near their opponents' circle, unless both they and the centre are unable to get an opening for a shot. When the ball is thrown in from touch they have to try to get possession of it, and should generally pass it back to the outside man. This is a comparatively easy task for inside right, but by no means so for inside left, who cannot reach out to hit the ball as it is rolled in. All he can do as a rule is to hamper his opponent by hooking or knocking up his stick before he can reach the ball. Of the two outside forwards, he on the right has much the easier position in which to play. Unless the half-back opposed to him keeps out near the line, he can nearly always slip past him on the outside. He can middle the ball with ease while going at a good pace, which is an impossibility for outside left, who has either to get slightly in front of the ball as it is running, and then try and middle it, with a good chance of missing it altogether, or else stop it first with his foot or stick, and then get in his stroke. The outside forwards should make a point of passing into the centre as soon as they have got beyond the twenty-five yard line, though outside left may go a little further than outside right, for his passes always come more at right angles to the side line than those from outside right. The outside forwards have to throw the ball in from touch, and must remember not to throw in hard near their own goal, but when near their opponents' to get the ball well into the centre if possible. All the forwards should make a point of taking passes with their sticks, and not waste time by stopping the ball with their hands or feet before hitting it. Individual play is quite useless, and no team with selfish forwards can expect to meet with much success.

Half-backs are perhaps the most important element in the team. Three good halves certainly go further towards making a good team than any other three players. Both backs and forwards are dependent on them. A good set of forwards will lose half their opportunities with weak half-backs behind them. Half-back is without doubt the position in the field that entails the hardest work, and, of the three, centre half has the most to do. Their duty is to support their forwards when they have the ball, and to break up the passing of the opposing forwards, and when they have done this, to feed their own forwards. They must assist the backs by falling back at once directly they have themselves failed to stop a run, taking care not to get in their way. They must never deprive a back of the ball when he is in a position to get in a good hit, as he is much better able to clear his lines than a half-back rushing towards his own goal. Centre half is perhaps the most difficult position of the three. He has practically to look after all the three inside forwards, whilst the wing half has at the most two forwards to mark and should devote his chief attention to the outside forward. In feeding the forwards, the centre half has much more scope, as he is in a position to pass to any of the five, and must be able to see at a glance which of them is in the most favourable position to start an effective run. A long pass to either of the outside forwards is a possibility for which he must always be on the look out, as this frequently proves very advantageous, particularly when the opposing wing halves are not keeping as near the touch line as they should do. A half-back must be full of resource for every emergency, and so needs to be quick and accurate with hands, feet, and stick. Short passing is best broken up by using the feet or the stick, as the half-back can then get the ball at once, whereas if the hands are used the stick has to be gripped again before hitting the ball. The hands should only be used for fielding the ball when it is in the air, and when there is plenty of time to get rid of the ball before the opposing forwards can get up to it. Half-backs must never dribble, but get rid of the ball as soon as possible to their forwards and then follow them up closely. It will thus be seen that half-backs need to be fast and to have plenty of staying power. They must be able to hit hard when near their own goal. Their passes to their forwards must be cleanly hit and go sharp and straight. If he cannot get in a hit to his for-

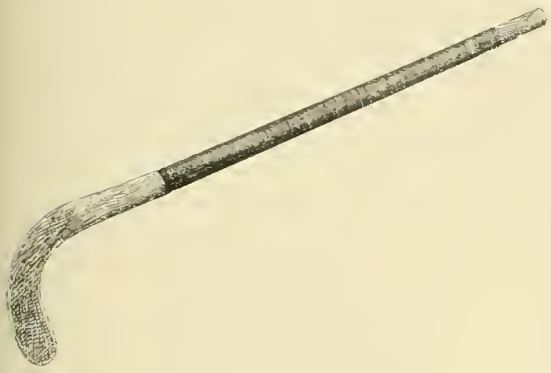
wards, a half-back can sometimes pass back to one of the backs; but it is obvious that this pass must always be very accurate, or it may prove disastrous. If the forwards have got past them, they can often hinder their progress by hooking their sticks and so help their backs to get the ball. One other point should be noted, and that is that no one-handed play should ever be indulged in by half-backs. It is nearly always ineffective in forwards, but is quite out of the question in defensive play.

The position of *back* is one in which a mistake may at any time prove fatal, so that a cool and steady player is absolutely essential for this post. He must be able to hit hard, but must not hit wildly and in any direction, and should always feed his forwards like a half-back whenever possible. When a half-back in front of him compels a forward to pass, he must be ready to intercept the pass and then get rid of the ball at once. If he is fast, he can play close up behind his half-backs, and smother passing before it becomes dangerous. If not he must keep further back, and rely on the half back catching up the forward again, or hampering his play so that he is easily tackled. He must have a thorough understanding with the half-backs in front of him, or they will constantly be running into one another. Inside the circle he must see that the half-backs keep well out of his way, or they will prevent his getting the ball away, and he in turn must always be careful to give the goal-keeper plenty of room and not obstruct his view of the ball. He should avoid as much as he can getting out to the side of the ground to tackle an outside forward, particularly in his own half of the ground, as this is likely to leave an opening in the centre and weaken the defence. In hitting the ball he should, whenever he has time, stop it first and then get in his hit. This will lessen the chance of a mis-hit or of missing the ball altogether, but of course there is not always time when forwards are rushing down on him. Being able to hit the ball on the run with accuracy is therefore a valuable quality in a back. A brilliant but erratic player is not the man for back, but rather the cautious man who will leave nothing to chance.

A good *goalkeeper* is a treasure that few clubs are fortunate enough to possess, and he makes an enormous difference to his side, not only by the actual number of goals he saves, but by the confidence imparted to backs and half-backs when they know they have a safe man behind them. He has a thankless task, and his position affords very little enjoyment and a large amount of responsibility. He needs to have an accurate eye, and to be very quick with hands, feet, and stick. His stick should be held in both hands, so that he can quickly have either hand free to stop a shot in the air. He should rely on his feet to stop shots along the ground, only using his stick as a forlorn hope for shots he could not otherwise reach. He should always hit the ball away if possible rather than kick it, as it takes a long kick to get the ball out of the circle, but frequently all he can do is to scrape the ball away with his feet. He should never hesitate to concede a corner when he can see no other opening, as he must get the ball away at all risks. To stop side shots he should move towards that side of the goal from which direction the shot is coming, as he will thus cover more of the space available for shooting at. The only occasion on which he should run out of goal is when a forward has got away and has hit the ball so hard that the goalkeeper can easily get to it first, or when a forward has broken through and is likely to get in a shot before he can be overtaken by the backs. In this latter case the goalkeeper should run forward right out of the circle so as to attempt to tackle him before he can get within shooting range, as this will be his only chance of saving his goal. There is very little likelihood of his stopping any fairly hard shot from a forward who can take his aim unmolested. Goalkeepers are divided in their opinions as to whether cricket pads or shin guards are the most effective to keep goal in. The former afford more protection to the feet and knees, but some say the ball bounces further off them than from shin guards, which is a great objection if correct, as a shot rebounding from the goalkeeper often affords a second opportunity to a forward and generally a very easy one. This matter must be left to the taste of the individual.

Outfit—All other players should always wear shin guards. They are no encumbrance, and, though a hard hit hurts nearly as much through a guard as without it, they prevent the skin from being broken, saving many nasty wounds. Gloves of some sort are worn by most players, as the knuckles are very liable to get knocked about by one stick glancing up another. Ordinary batting gloves are very convenient, as they leave the fingers comparatively free for a good grip of the stick. It is hardly necessary to add that boots should always have bars or studs on the soles and heels to prevent slipping. Rubber soles are sometimes worn, but they are not very effective on a wet ground. The choice of a stick, which must be capable of passing through a two-inch ring, must be left to the player's taste. He will soon find out what weight and shape suits him best. Forwards will find it convenient to play with a fairly short stick, which should not weigh more than 22 ozs. Backs and half-backs need a stick two or three inches longer than a forward, as they require a longer reach. This extra length, and the fact that they require to hit harder, entails a heavier stick, but 25 ozs. is quite heavy enough for any player. It has

been found by experience that sticks of 26 and 28 ozs., or even more, which some players formerly used, are no more effective for such hard hitting as is necessary, and their weight prevents their being freely handled. Hard slogging is not the correct game, and the lighter the stick



Hockey Stick.

a player can use efficiently the better. The ball is an ordinary cricket ball painted white. Attempts have been made to find another more suitable ball, the idea being that a cricket ball is too hard, but nothing better has yet been discovered.

Umpires—The umpires are as a rule two in number, with occasionally, but very seldom, a referee. The game is too fast for one man to take entire charge as at football, so each umpire takes one half of the ground. They are on either side of the ground, so that each can control one touchline for the whole length of the ground. They should always try to keep level with the ball while it is in their own half, as they are then less likely to make mistakes in the case of appeals for offside. The ball travels at such a great pace that umpiring is no easy matter at hockey. A series of hints to umpires has been drawn up by the Hockey Association and is published at the end of the official book of the rules of the game.

Matches—Of representative matches the annual game between North and South is always looked forward to with great interest and never fails to afford a good exhibition of the game. The match first took place in 1890, when hockey had only been played for two or three seasons in the North and naturally resulted in an easy victory for the South. Each year saw a reduction in the score against the North, until in 1894 the match was a draw, but the South have won the three matches since then, though each game has been a close fight. England has played three matches with Ireland, winning in 1895 by 5-0, in 1896 by 1-0 after a hard game at Dublin, while in 1897 the result has been another win for England by 8-3. Ireland has played Wales three times and won easily on each occasion.

County matches have taken place for years between Surrey and Middlesex, and latterly each of these counties has played Kent. These matches do not excite much interest in the South, as club matches are considered far more important, and a great struggle takes place every year for the position of premier club. For the first six seasons after hockey was revived, Molesey was undoubtedly the strongest club, but from 1891 to 1896 Wimbledon was top of the list. The season of 1896—97 saw both Wimbledon and Molesey ousted from the position by Bromley, a comparatively young club in Kent. The last two seasons have witnessed a general levelling up of the clubs as regards form, and there is very little to choose between the four or five best teams. More interest is taken in county matches in the North, and Lancashire and Cheshire have frequently beaten the Southern Counties.

The game has so far been kept entirely free from any suspicion of professionalism, thanks to the efforts of the Hockey Association.

E. L. Clapham.

RULES OF THE GAME

1. A hockey team shall number eleven players, unless otherwise agreed by the respective captains.

2. The ground shall be 100 yards long and 50 yards wide, marked with white lines, and with a flag at each corner. The longer sides to be called the "side lines," and the shorter sides the "goal lines."

3. The goals shall be in the centre of each goal line, and shall consist of two uprights 12 feet apart, with a horizontal bar 7 feet from the ground.

4. In front of each goal shall be drawn a line 12 feet long, parallel to the goal line, and 15 yards from it. The ends of this line shall be curved round to the goal lines by quarter circles, of which the goal posts form the centres. This line to be called the "striking circle."

5. The ball shall be an ordinary cricket ball, painted white.

6. The sticks shall have no metal fittings whatever, and no sharp edges, and they must be able to pass through a ring 2 inches in diameter.

7. No player is to have any metal spikes or projecting nails in his boots or shoes.

8. The choice of goals shall be tossed for at the beginning of the game, and the goals shall be changed at half-time.

9. The game shall be started by one player of each side bullying the ball in the centre of the ground, and after each goal and after half-time there shall be a bully in the centre of the ground. The bully shall be played as follows: Each player is to strike the ground on his own side of the ball, and his opponent's stick over the ball three times alternately; after which either of the two players shall be at liberty to strike the ball.

10. In all cases of a bully, every player shall be between the ball and his own goal line.

11. A goal is scored when the ball has been driven between the goal posts under the bar. No goal can be scored unless the ball be hit from a point within the striking circle. A ball struck from without the striking circle, and touching or glancing off the person or stick of a player on the defending side, cannot score a goal.

12. When a player hits the ball, any player of the same side who at the moment of hitting is nearer his opponent's goal line is off side, and may not touch the ball himself, nor in any way whatever prevent any other player from doing so, unless there are at least three of

his opponents nearer their own goal line, and a player once off side cannot be in play again until the ball has touched or been hit by another player.

13. The ball may be caught (but must be at once dropped) or stopped with any part of the body; but it must not be carried, kicked, or knocked on, except with the stick. The ball shall be played from right to left only, and no left or backhanded play, charging, kicking, collaring, shinning, or tripping, shall be allowed. Fencing or hooking sticks shall not be allowed, unless one of the players is on the ball. A player shall not run in between his opponent and the ball so as to obstruct him, nor cross him from the left so as to foul him. The goal-keeper shall, however, be allowed to kick the ball away in defence of goal.

14. When a player strikes at the ball, his stick must not during any portion of the stroke rise above his shoulder. And no player may interfere in any way with the game unless his stick be in his hand.

15. On the occasion of a free hit, no member of the offending side shall be within 5 yards of the spot where such hit is made, and the striker must not play the ball again until it has touched or been hit by another player.

16. The penalty for any breach of Rules 12, 13, 14 and 15, committed outside the striking circles, shall be a "free hit" by one of the opposite side, on the spot where the rule was broken. For any breach of Rules 12, 13, 14 and 15, by the attacking side, committed inside the striking circle, a free hit may be claimed by the defending side. For any breach of Rules 12, 13, 14 and 15, committed by the defending side inside the striking circle, the attacking side can only claim a "bully."

17. When a ball passes the "side line," it shall be rolled out along the ground from the spot where it crossed the line by one of the opposite side to that of the player who last touched it in any direction except forward. No other player shall stand within five yards of the side line. The ball may be rolled out at once, and the player who rolls it out must not touch the ball again until it has touched or been hit by another player.

18. If the ball is hit behind the goal line by the attacking side, it shall be brought out 25 yards in a direction at right angles to the goal line from a point where it crossed the line and there "bullied;" but if the ball glance off, or is hit behind by any player of the defending side, a player of the attacking side shall hit it out from a point on the side or base line within a yard of the nearest corner flag, and at the moment the ball is so "hit out," all the defending side must be behind their goal line, and all the attacking side must be outside the striking circle.

19. Should there be no umpire or umpires appointed by the two captains, the captains shall be arbitrators in all disputes, and should two umpires or arbitrators fail to agree, they must appoint a referee, whose decision shall be final.

NOTE.—The game is usually played for one hour and ten minutes, half-time being called after thirty-five minutes.

HOMING PIGEONS—Homing pigeons, under various disguises, such as Antwerps, Skinnums, Longfaced Beards, Horsemen, &c., have been known, in this country at any rate, since the publication of Moore's Columbarium early in the eighteenth century. The homing instinct is common to all the varieties of the pigeon, and goes right back to the fountain head, the half domesticated blue rock. In the fancy varieties, the breeding for points purely has tended to decrease the homing instinct, whereas the homing fancier heeds not the colour of the eye or shape of bill or wattle; his one idea has been to intensify "the homing qualities" of the parents, and in this way only the best performers have been used for stock purposes. It has been a game of the "survival of the fittest," and the homing pigeon, with its muscular shoulders, deep chest, and "vanishing keel," has been produced. The flight feathers are long and wide, the webs of the feathers overlapping, while the skull is moderately short, wide at the base and across, and furnished with a strong short bill. The eye may be of any shade, from white to red, though deep red is the most common, and the colour of the plumage may be anything from white to black, though the prevailing colours are undoubtedly blues, or reds with blue or black checkering, the self colours of white or black being the rarest.

HOMING PIGEON.

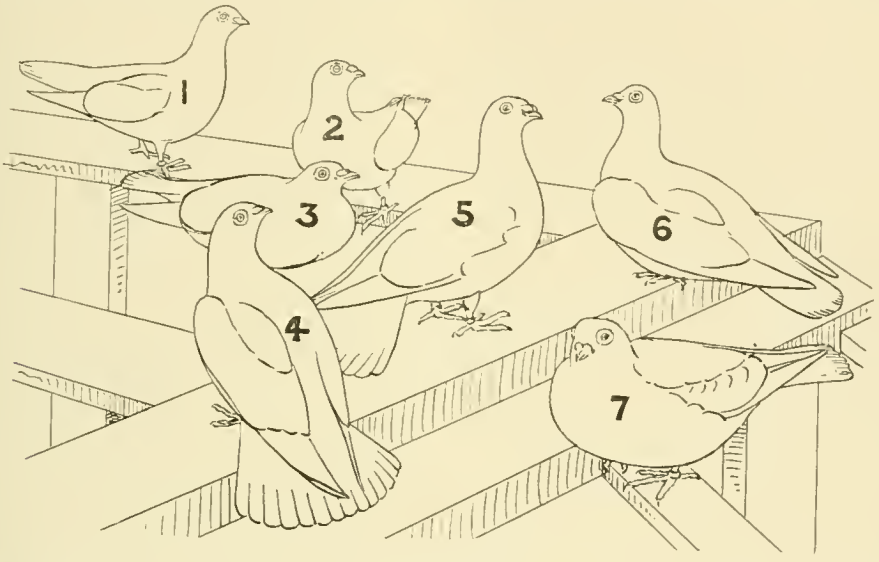
The homing pigeon, like all the other varieties, is a product of human patience and skill, and, it has been said, derives its strength of wing from the dragon, and its height of flight from the tumbler, but it is curious how very soon the tumbling propensity which distinguishes the pigeons of that name vanishes from a loft of pigeons kept for racing purposes. In Belgium, the home undoubtedly of the homing pigeon, it may be stated that there are two great divisions of the breed. These are the Antwerp type, which is the one above described, with the size throughout exaggerated, and the Liège type, which is finer in build generally, save that the wing power is retained, while the skull is shorter and rounder. Some of the finest long distance performances have been

Drawn by J. G. Keulemans — Swan Electric Engraving Co.

Homing Pigeons

accomplished by these little "messengers of Liege," and the British fancier has for some time been importing the Liege type as a cross with what may be called, for want of a better term, the Antwerp type. The result is apparent, for the homing pigeon of to-day is finer in body form than it was ten years ago. It may be said that the Belgium fancier has proceeded on the same lines, and we think the result has been to produce a bird distinct in itself as a variety, more pleasing to the eye than formerly, and without sacrifice of stamina or speed.

The history of long distance flying in this country may be soon told. Before the introduction of the telegraph, the pigeon was used almost exclusively as a messenger for conveying commercial intelligence, and many of the large



KEY TO PLATE.

1, Light Mealy; 2, Common Antwerp; 3, Dark, Long-faced Antwerp (short distance swift flyer) 4, Mottled Homer; 5, Short-faced Antwerp; 6, Blue Antwerp; 7, Dark Mottled (long distance flyer).

houses had lofts especially devoted to bringing news of the ebb and flow of the markets. The distances over which these messages were conveyed did not exceed fifty miles, though some of the firms had birds capable of flying from London to Lancashire, which was considered a notable fly thirty years ago. It is a historical fact that the news of the victory of Waterloo was, by means of a pigeon post, in the hands of a private firm many hours before the Government knew the result of the battle. The telegraph killed the homing pigeon as a messenger for commercial purposes, though it is interesting to record that the progeny of these birds are doing good work in the races of to-day. It was, however, through the Siege of Paris, when the city was shut in on every side, that the world at large became really aware of what the homing pigeon was capable. Mr. J. W. Logan, M.P., may be credited with the Fatherhood of the Fancy, for he first organised races on almost a national scale, and was one of the first to import, for stock purposes, the very cream of the Belgium lofts. The United Counties Club was formed about 1880, under which the larger part of England was divided into competing districts, and the era of long distance racing began. It is interesting to record that the south-eastern was the route first adopted, *viâ* Dover and Arras to Paris.

There are now clubs in every town and village in the United Kingdom flying long races, and the number of birds in training amounts to hundreds of thousands. The Homing Pigeon Fancy, as it exists to-day, is not in any way associated with public house sweeps of, say, one mile to three miles; the shortest race of the majority of clubs is about seventy miles, extending, with intermediate races, up to a final point of 400 to 550 miles. The four clubs in this country with the largest membership are the Manchester Flying Club, the Central Counties Flying Club, Airdale Flying Club, and New Mills Flying Club. London and Liverpool have each three clubs of recognised standing. The Central Counties Flying Club, of which H.R.H. the Duke of York is a member, has a double programme, and flies races from Marennes on the south, and Thurso on the north route. The La Rochelle Club has one race only, which must be for a distance over 500 miles for all members. The best routes to fly are the northerly or southerly, and experience has proved that easterly winds are to be avoided as far as possible. In addition to the club races, several clubs band themselves together under the name of federations, and thus we find from one to three

thousand birds competing in a race. There is a Homing Pigeon Protection Society, which undertakes the prosecution of persons shooting or detaining pigeons the property of members. In addition to this there are two weekly papers devoted to pigeon flying, *The Homing News* and *The Fanciers' Gazette*.

So unwieldy has the Fancy grown that it has been found necessary to have a governing body at the head of affairs, and hence at the end of 1896 the National Homing Union was formed, of which Mr. J. W. Logan, M.P., is president, and Mr. Plackett is the secretary. The rules of the Union have been drawn on the lines of those of the Jockey Club, and in fact the Union is the Jockey Club of pigeon flying. There are 114 clubs enrolled under the Union representing an individual membership of over 3,000. The Homing Pigeon has also found its way into most of our Colonies.

In dealing with the instinct of the homing pigeon, little can be given in explanation. It is an enigma which possibly will never be unriddled. It has been put down to a mysterious sixth sense, to a love of home, to marvellous sight, &c., but the fact stands out that if a number of birds were taken without having been previously trained at intermediate stages and tossed at, say, 100 miles, not a bird would find its loft again; whereas, if carefully trained up to about 250 miles, the birds may safely be jumped another 250 miles over strange country. If the weather is favourable, a large percentage will be in their lofts again the same day. This would point to the fact that education plays the important part, but, over and above all, the pigeon possesses some unexplained power of orienting itself, and so striking on the line for home.

This leads to the speed of the homing pigeon, and a moment's consideration will show that the speed of flight must depend on the direction and the force of the wind. It is quite a common occurrence for pigeons to fly over a mile a minute for long distances with a strong favouring wind, and the season of 1897 stands out prominent in the many velocities recorded of over 1,800 yards a minute. The races, however, that want winning are those flown against a head wind, the winning bird flying 700 to 800 yards a minute. These are the races that bring out stamina, and in which blood and condition tell a tale, and these undoubtedly are the birds that will become the Hermits and the Herchells of the Pigeon Stud Book.

The ambition of the Fancy is to fly over 500 miles in the day, but it is apparent, if this is to be done, that wind and weather must be favourable for the entire journey. It is therefore much easier to fly 550 miles on a favourable day than 200 against a head wind on a bad day. The 500 miles in the day has often been accomplished on the Continent and in America, and in 1896 several birds flew from Thurso to London in the day, the winner actually covering 1,454 yards per minute for the entire journey of 501 miles. In 1897 the La Rochelle and one or two other Clubs, flying on the same day, flew from Marennes, in the south-west of France, about 550 miles in the day, many birds accomplishing from 1,000 to 1,300 yards a minute. These two performances stand out as high water marks over ten years of as many attempts and as many dreary failures, and we have no hesitation in saying the Fancy would have been a great gainer if these 500 mile races had never been attempted.

The Fancy, we think, should finish its season at about 400 miles. This distance has been, and can be, accomplished in the day against a head wind, and it is doubtful if 500 ever will. The conclusion of the matter is, that no distance should be attempted that cannot be accomplished in the day against a head wind. Pigeons have returned from a 1,000 miles, but this is not sport but cruelty: the moment the bird has to drop for the night it becomes a mere chance whether it reaches home or not. We are not pessimists by any means, and, whatever we say, the Fancy will go on throwing birds away in the attempt; but it is a mere question of dividing miles into minutes, and you cannot lengthen out time. We grant that much may yet be accomplished in improving the stamina of the birds, and the Fancy at present knows very little of what is condition or fitness, or, in other words, of the circumstances under which birds do their best work.

It is simply astounding to see the lethargy of the Government in not recognising at once the value of the homing pigeon as an accessory to military and naval operations. On the Continent we find France, Germany, Belgium, Spain, Italy, and other countries with hundreds of military lofts and thousands of trained birds. It was recorded in the summer of 1897 that the German Government had liberated 2,000 birds at Dover.

For short distances, say from thirty to fifty miles, the pigeon may be considered as reliable as the telegraph, and a pigeon can accompany a ship out to sea, and we cannot, at any rate at present, carry the telegraph in our pocket.

A few words in answer to the question, "How to start a loft?" There is no need whatever to go on importing birds from Belgium. We have as good birds in England as ever flew in Belgium, and, given Continental weather, there is no doubt whatever that our performances in the 500 miles races would compare favourably with anything done in Belgium. We should advise purchasing half a dozen pairs or so of squeakers of the best blood. If these are taken away early enough, they may be easily used to a new loft. As regards the loft, any room will answer the purpose provided it is dry, sweet, and free from

draught. The homer is of the hardiest nature, and does not want coddling in any way. There must, however, be no overcrowding, and cleanliness of water fountains, food, and loft are essentials. The food varies according to the season. Good sound barley is the best food during the moulting season and to the end of January. The birds may then be put on to a mixture of maize, peas, dari, &c., and this may be continued to the end of April, when they go into the training baskets, after which old peas and tic beans are the strongest and most sustaining food. The life of a homing pigeon as regards racing may be briefly put as follows :—At twelve weeks old it may be taken a mile from home, and this may be increased to three miles the next day, and so by stages of six, twelve, twenty-five, fifty, and seventy-four miles. The last would be about the first race point. The birds should not be sent on every day, but allowed a day or so to rest, especially if they should have met with bad weather. From the seventy-four miles it would be jumped to the next race point, say, in seven days after to ninety-six miles, and so to 124, 154, and 200 miles. It will seem by this that a bird under twenty weeks old would have flown over 600 miles in races alone. This is what many birds do, but it is perhaps forcing matters too far. The racing season is then over for the year, and the following year the bird will go over the same ground again and on to, say, 250 miles ; though some few birds go through to 350. In the fast race from Marennes several yearlings flew over 520 miles and were well up in the prizes. For long distance work, the third to fifth season is undoubtedly the best, though birds have been known to work well for nine or ten years, and in some rare cases to much older.

In conclusion, the training of the homing pigeon is a most fascinating pastime, and, granted a real love of animals to begin with, and sufficient time to study the birds and to attend to their training and feeding, there is no reason why success should not follow one's efforts.

W. Bancroft.

HORSE—THE ARABIAN—The Arabian horse—in Arabic *Kehailan*—is probably the most ancient of existing domestic breeds. He is also the original "thoroughbred" horse of the East, from whose exemplar all Western ideas of thorough breeding in horseflesh were derived. He has been held in repute as of "noble" blood for at least 1,300 years, and has been bred with fanatical reverence and pure from all foreign admixture in peninsular Arabia as far back as the records of that country go ; that is to say, till the second century before Mohammed, the sixth of our era.

It is a matter of considerable dispute in modern science whether or not the Kehailan was indigenous to Arabia as an original wild breed. The common Mohammedan tradition would make him a gift from Solomon to the Arabs, or, again, descended from mares ridden by the prophet ; but Western criticism rightly rejects these tales, nor are they, in truth, real Bedouin traditions local to Arabia itself. The local tradition is that the Kehailan is a separate wild breed kept pure in the desert from the time of his first capture and domestication ; that his habitat was Nejd and the high plateaux of Yemen, and that he owes his distinguishing qualities to the fact that his original blood has never been mixed with that of breeds of inferior type. In physical science there is as yet nothing positively ascertained which would show this to be improbable. The high plateaux of Arabia, though all of them desert land—in the sense that they contain no district where crops can be grown in full dependence on the rainfall—are neither without pasture nor without water. It is unquestionable that the wild ass existed, if he does not still exist, in Yemen, and the wild horse too may have there existed. In the sandy tracts there is a certain fine grass called *nossi*, which grows freely, especially within range of the occasional monsoon rains, and it is excellent pasture for horses, so that it is quite conceivable that in the gradual drying up of the peninsula, of which we have geological proof, a section of the wild species may have found itself cut off in the South from the rest of its kind, and have developed there in isolation the special qualities we find in the Kehailan. This is Professor Ewart's opinion, and, in the absence of evidence contradicting it, may be provisionally accepted as true. On the other hand, what historical evidence does exist is adverse to the idea of a very early possession of the horse as a tame animal in Arabia. The Bedouins, certainly of Northern Arabia, would seem during the ages immediately preceding Christ to have been, as indeed many of them are still, exclusively camel-riders, and there is a significant absence of all mention of the horse in lists which have been preserved of the then products of the country. Strabo, on the authority of his friend Ælius Gallus, Prefect of Egypt, who made an armed expedition into Western Arabia in the year A.D. 24, says of Arabia Felix (Yemen) : "The products of the soil are good. Much honey is made and much cattle reared, amongst which, it is true, are seen neither horses nor mules" ; and again of the land of the Nabatheans (Hejaz) : "the land does not produce horses, but camels take their place."

The monumental French work of M. Piètremont, *Les Chevaux préhistoriques et historiques*, should be consulted on this point, his opinion being that the Arabs did not become horse riders till the third century after Christ. In English our best authority on the subject, though perhaps rather out of date, Colonel Hamilton Smith, is of a similar opinion ; and

on historic grounds alone the balance of evidence would seem to be in favour of a comparatively late date for the domestication of the Kehailan. All that we know positively is that in the fifth and sixth centuries of our era the Bedouins of Nejd and Yemen were already possessed of a special breed of horses of which they boasted as an "ancestral possession." "Are not these," says their poets of that date, "an inheritance from our fathers? Shall not we to our sons in turn bequeath them?" It is clear too from their descriptions that the horse then possessed by them was identical in his chief characteristics

"AZREK," AGED TEN YEARS.
A pure Anazeh horse, bred in the desert.

with the modern Kehailan, as were the ideas of his owners concerning him. There is a description in one of the Abu Zeyd cycle of romances of a Bedouin mare, which is precise in its details and which might have been written yesterday :—

"*Spare is her head and lean, her ears pricked close together,*
Her forelock is a net, her forehead a lamp lighted,
Illumining the tribe, *her neck curved like a palm branch,*
Her wither sharp and clean. Upon her chest and throttle
An amulet hangs of gold. Her forelegs are twin lances.
Her hoofs fly forward faster ever than flies the whirlwind,
Her tail bone borne aloft, yet the hairs sweep the gravel."

Nor are prose writers silent. Ockley, in his *History of the Saracens*, quotes from the Arab historian, El Wakidi, a decree of the Caliph Omar, A.D. 633, which shows the value already set in Arabia on this special breed. "After the battle of Yermuk," El Wakidi says, "Abu Obeidah, the Arabian commander, divided the spoil thus: 'To a horseman he gave thrice as much as to a footman, and made a further difference between those horses which were *of the right Arabian breed* (which they looked upon to be far the best) and those that were not, allowing twice as much to the former as to the latter. And when they were not satisfied with the distribution Abu Obeidah told them that the Prophet had done the same after the battle of Khaibar, which upon appeal to Omar was by him confirmed.'"

Of European authors the oldest I can find mentioning the Arabian horse as a special and valued breed is Marco Polo. He, writing about the year 1290, says of Arabia and the Port of Aden: "It is from this Port of Aden that the merchants obtain the fine Arabian destriers of which they make such great profit in India, for you must know that they sell in India a good horse for well one hundred marks of silver and more."

It is certain, however, that long before this the Kehailan must have made his way into Europe, for the first time doubtless in the van of the Arab invasions of the eighth and ninth centuries, which having swept across North Africa, passed over into Spain, and through Spain into France. Here he left his trace permanently in the Barb and the Andalusian, and, as is locally believed, in the French Limousin. The great value however of the Kehailan blood does not seem to have been fully recognised in Europe until the practice of wearing heavy armour in war was well on the decline, and it was then introduced rather through Turkey and the Barbary States than directly from Arabia. Leo Africanus, a Moor of the sixteenth century, who had travelled through the whole of North Africa and of the Arabian deserts from Timbuctoo as far as the Persian Gulf and allowed himself to be converted to Christianity at Rome, makes an interesting mention in his description of Africa of the Arabian horses, which, under the name of Barbs, began at that time to be renowned in Europe, and which is of especial value as showing the close connection between the Barb and the Arab. "This name (of Barb)," he says, "is given unto the Barbarie horses throughout Italy and all Europe, because they come foorth of Barbarie and are a kind of horses that are bred in those regions, but they which thinke so are deceived, for the horses of Barbarie differ not in any respect from other horses; but horses of the same swiftness and agilitie are in the Arabian toong called throughout all Egypt, Syria, Asia, Arabia Felix, and Deserta by the name of Arabian horses. Historiographers affirme that this kind of wild horse ranging up and down the Arabian deserts ever since the time of Ismael have so exceedingly multiplied and increased that they have replenished the most part of Africa; which opinion savoureth of truth, for even at this present there are great store of wilde horses founde both in the African and Arabian deserts. And I myself saw in the Numidian Desert a wilde colte of a white colour

and having a curled maine. The most certain triall of these horses is when they can overtake the beast called lant or the ostrich in a race; which if they be able to performe they are esteemed woorth a thousand ducats or an hundred camels." The *lant* (eland?), he explains, "is so exceeding swift that no beast can overtake him, but only the Barbarie horse as is beforesaid." He also affirms that "the Arabians of the desert take the wilde horse and eate him, but he will hardly be taken with either horses or dogs. In the waters where this beast keepeth they lay certain snares, covering them over with sand, wherein his foot being caught he is entangled and slaine." The writer of this monograph quite recently received identically the same account as this of Leo's from a negro of Wadai, who spoke of the wild horses still captured there as Kehail. He described the method of snaring them, and declared that when tamed they could go ten days without water. The Arabs of Wadai used them as sires with their tame mares.

In England we first hear of "Barbs" in Charles II.'s time, when the "Royal Mares" were brought for the King from Tangiers, and about the same time of "Turks," captured in the wars in Hungary. It was not however till the beginning of the eighteenth century that the great success of the "Darley Arabian," a horse of undoubted Kehailan blood and purchased direct from the Arabs of Northern Arabia by Mr. Darley, our Consul at Aleppo, revealed to English breeders the true source of excellence in Eastern blood. From this date the importations registered in the Stud Book show a constantly increasing preponderance of "Arabians," as against Barbs or Turks. They were, I imagine, obtained direct from the Syrian Ports or the Persian Gulf; and there is every probability, judging from such portraits of them as remain to us, that they were pure Kehailans, though of the Darley Arabian alone we know the particular strain of blood, Mánaki, to which he belonged.

Captain Upton, in his interesting book *Newmarket and Arabia*, enumerates 101 Arabian stallions, 44 Barbs, and 28 Turks, as having been registered first and last in our Stud Book. The importation was well maintained until near the close of the eighteenth century, when it seems to have been interrupted by the great war which then began and which made communication with the Levant difficult.

It would be an interesting speculation to calculate the amount of true Kehailan blood flowing in the veins of our modern English racehorse, but it is one on which I dare not enter here, beyond hazarding the opinion that it amounts to at least three-quarters, perhaps to seven-eighths, of the whole. It may well be that even the unknown English mares figuring at the head of most pedigrees were in fact partly of this blood, either through Barb or Turk or Spanish ancestors—while in the male line the blood of the Darley and Godolphin Arabians is everywhere preponderant. The Godolphin, though reaching Europe through Tunis, was almost certainly an Arabian, as his original name, "Scham" (Damascus), would seem to indicate.

The price of Arab horses in the seventeenth and eighteenth centuries seems to have been high. Henry Blount, 1634, says that in Egypt in his day as much as 1,000 pieces of eight was paid for a three-year-old of the true breed; Hamilton, 1720, mentions £50 and £60 as being a small price for one at Moccha, and Niebuhr, 1762, says: "The English sometimes purchase their horses at the price of 800 or 1,000 crowns each." An English merchant was offered at Bengal twice the purchase money for one of their horses, but he sent him to England, where he hoped that he would draw four times the original price (say £800). The *Sporting Gentleman's Dictionary*, 1735, mentions still higher sums "£500, £1,000, £2,000, and even £3,000;" as "the intolerable price" demanded for the "right Arabian horses" exported from Scanderoon, pricing at the same time the Turkish horses at £100 to £150 and the Barbs at but £30 in their own countries. In 1782 Arthur Young records that at the Royal Stud of Pompadour in France three Arab horses had just been acquired at a cost to the King of 72,000 livres (£3,149).

In former days the Kehailan was bred in most Arabic speaking lands with more or less purity. Egypt, Syria, and South-Western Persia, to say nothing of the Barbary States, had their own breeds, which boasted of pure Arab origin; but at present the area of his distribution has been restricted even in Arabia itself within comparatively narrow limits, and there are indications of a decline of the race which seems to be becoming general. Egypt, with the exception of the single stud of Ali Pasha Sherif, possesses no pure blood, nor is it to be found in Tunis, Tripoli, or Algeria. In southern Morocco the tradition of pure breeding, if preserved at all, is so only among the remote desert tribes beyond the Atlas—who still boast of possessing strains of blood brought with them in their migrations from Nejd in the thirteenth and fourteenth centuries. Syria is almost stripped of its authentic breeds, once numerous in the Lebanon; and although a considerable sprinkling of pure mares is still to be found in Homs, Hama, and Aleppo, and in the villages of the Euphrates, their quality is far from what it used to be; so much so that the horse-buying commissions sent by the French and other European Governments find it yearly more difficult to acquire stallions of standard merit. In Mesopotamia the breed is becoming more and more mixed, and in all the Bagdad district it has long been a by-word. A few good mares are still to be found in Persian

Arabistan but the great studs of the Bakhtiari chiefs are gone, and it is very doubtful whether any pure blood at all is to be found now in Persia proper. Pure Kehailan blood may therefore be considered as confined in the present day strictly to Arabia, and even there within ever narrowing limits.

"MESAOUD," A PURE BRED SEGLAUR; TEN YEARS OLD.

The reasons of this general decline are, first, the ever-increasing military pressure of the Ottoman Government, which has broken the independence of the tribes on the Arabian frontier and limited their areas of summer pasture. Secondly, the gradual adoption of firearms by the Bedouins in their inter-tribal wars, and thirdly, the more systematic "combing" of the desert for stallions for the Indian market. It has been found that, wherever firearms take the place of the lance, there the tribesmen care less about their horses and revert to their original camel-riding in their raids. It is certain too that for many years past the handsomest and strongest colts have been taken away more and more unsparingly from the strength of the breeding stock, while the tribes have contented themselves with less and less perfect stallions for their stud use. The blood has remained the same, but the stock has declined in vigour, in beauty, and in excellence.

The following is a list of all the tribes of whom it can safely be affirmed at the present moment, 1897, that they are possessed of the true Kehailan blood stock.

Sebaa, Fedaan, Ibn Haddal	Anazeh	
	Kahtan	Montefik
	Muteyr	Oteybeh
	Ajman	Harb (a few)
	Shammar	Beni Suleiman (a few)
	Rowala	Daffiri.

There are also in Arabia certain studs still flourishing in the hands of princes and individuals which are recognised as authentic. The chief of these are the studs of the Emir Ibn Rashid at Hail, of Eid et Temimi at Oneyzeh, of the Emir Ibn Khalifa at Bahreyn, and of the Sultan of Muscat. Outside Arabia the only Eastern stud of any importance recognised by the Arabs as authentic is that of Ali Pasha Sherif, at Cairo, which is held in great respect by them, as descended from the mares and horses collected, at the expense, it is said, of a million sterling, fifty years ago in Nejd by Abbas I., Viceroy of Egypt. The Ottoman Sultan's stud at Constantinople is of recent growth and of no special value. It is a collection of some 800 stallions, many of them of great beauty, but of which the pedigrees have been lost, and of some 40 mares, few of them "*mazbutat*" (of known pedigree) or of the first quality. In India fine horses abound in the stables of the native princes, especially at Jodpore, and in the hands of the rich Bombay merchants, but few mares; and I do not know of any Indian stud exclusively managed on the Arabian principles of breeding. The Indian Government in 1893 had 147 Arab stallions in stud use in Bombay and the Northern provinces. These had been purchased at from 1,200 to 2,000 rupees, but the price has since risen. In Europe the oldest Arab studs are those of Prince Sanguscko and Count Joseph Potocki, in Poland, both of high quality, which date from the end of the last century, and of the Branicki family in the Ukraine. Although the pedigrees in these are imperfect from an Arab point of view, they all contain mares of fine Arabian type, especially Prince Sanguscko's, and supply magnificent chargers to the Russian Imperial cavalry. Next to these come the Royal Stud of Wurtemberg and the Austro-Hungarian Imperial Studs at Libitza and Babolna, at all which establishments great care has been taken in the acquisition of Kehailan mares as well as horses. In Italy there was in the time of King Victor Emmanuel a truly magnificent stud, containing as it did half of Abbas Pasha's famous collection. But it was unfortunately sold and dispersed at the King's death in 1878; while in France, though Arab stallions are largely used for cross breeding, there is still no pure Kehailan "Haras." Prussia has quite recently been endowed by the Emperor William with a pure stud at Neustadt; but Spain, Portugal, and the rest of the European States are still unrepresented. In England the first attempt to breed from pure Arabian mares as well as horses was made by Mr. Chaplin in 1875, who sent Captain Upton, an enthusiast on the subject, to Aleppo, where with the help of Mr. Skene, H.M. Consul, he purchaased some authentic stock. But ill luck attended the venture. The best stallion died, and one or two of the best mares proving

barren, the project was shortly after abandoned. It was revived, however, in 1877 by the writer of this monograph on a larger scale and with better results. The Crabbet Park Stud, established in the autumn of that year, now numbers some thirty brood mares of the most authentic strains of blood, the produce of which are sold yearly by auction and realise good prices. The average of all sales during the last fifteen years from the stud stands as high as 110 guineas. It is carried on on strict Arabian principles, and as there is no attempt at increasing the height of the stock, the Kehailan type has been well preserved. It has supplied breeding stallions to nearly every part of the globe, including North and South America, South Africa, Australia, India, and even Turkey. The Honourable Miss Dillon's stud at Pudlicote, started in 1884, has won many prizes in open jumping competitions.[1]

In America Arab breeding was commenced some twenty years ago by Mr. Huntington, and has subsequently been taken up, but on no large scale, by others. Several small studs exist in Australia, and Arab stallions and mares have lately been imported by Mr. Cecil Rhodes into South Africa. It may be hoped, therefore that any falling off there may be in his original home is being compensated to the Kehailan elsewhere.

The total census of the Arabian horse cannot be large. Of quite pure authentic blood there are probably not 2,000 brood mares left in Peninsular Arabia, with perhaps as many more among the northern tribes—5,000, let us say, the world through, all counted.

The Bedouin system of breeding is one rigid in its principles. The noble tribes divide their mares into three categories. 1. The *Mazbutat* (authentic) mares, of absolutely certain pedigree, their ancestors having been from time immemorial in the tribe. From these alone colts are chosen as stallions for the tribe, all others being sold away as yearlings. 2. Mares taken from other noble tribes and their descendants. These are often authentic, their pedigree being known. But their colt produce is disqualified, and even one of their own Mazbutat mares, if lost and bred from away from the tribe, remains on her return disclassed. 3. Mares of unknown pedigree. These in the best tribes are used for riding only, and are not bred from. They go by the name of *Shimalieh*, Northerners, or Kadisheh, mares of no breed, the Mazbutat mares being sometimes called *Nejdieh*, of Nejd, in distinction, though there is no such thing as a "Nejd" breed.

All authentic mares claim to be descended from certain original strains of Kehailan blood. The most notable are the Seglawi, Managhi, Abeyan, Hamdani, Dahman, Hadban, Jilfan, Toweysan, Saadan, and Wadnan. The five first are generally known as the "Khamsa." The pedigrees are chiefly remembered through the dams, the blood of the sire being taken for granted as always beyond question. These are not written in the desert, but kept by oral tradition. Within the tribe the blood of each mare is of common notoriety and so is not a subject for deception, but strangers need to be on their guard.

The single object for which the Kehailan is bred by the Bedouins is service in their wars. For this the qualities necessary are great powers of endurance, the capacity of making long marches, of 300 or 400 miles, without flagging, an extreme sobriety in the matter of food and drink, and a sufficient turn of speed at the end of the raid to overtake the enemy or elude pursuit. Mere speed over a short distance is not encouraged by any system of racing or trials. The sole practical test is in the raid ("ghazu," Italianised "razzia"). What is of at least equal importance with speed, inasmuch as all fighting is done with the lance, is perfect shoulder action, facility in turning, a light mouth, intelligence and courage. All these qualities are conspicuous in the true Kehailan, and seem inherent in his blood. The rigorous conditions of his desert life ensure a certain hardihood of constitution; his feet are of iron. He stands unsheltered night and day; he is hardened against hot sunshine and bitter winds. The Bedouin camp is a perpetual turmoil of noise: he is bold and cool-headed. From his foalhood the children have crawled among his feet in the tents: he has the temper of a lamb. He is made for the vicissitudes of campaigning life, and is thus the most complete light cavalry horse imaginable for all countries where hard work and short commons, especially under a burning sun, are the rule of the campaign.

As a racehorse, the Kehailan, though not scientifically bred for the purpose, would seem to have in him a natural quality of speed superior to any other natural breed. Neither the Tartar of Eastern Asia, nor the Cossack, nor any of the unimproved European breeds, can at all compare with him on this head; and it is only his own illegitimate descendant, the English thoroughbred, that has at length distanced him. For over a hundred years he figured victorious against all comers on the Indian turf, and until quite recently he held his own there even against English blood. Latterly, however, he has become less in fashion in India, and has had to give place on most racecourses to the improved Waler, who, thoroughbred or nearly thoroughbred, has been found able to beat him at an allowance. At the present time Arab racing proper is nearly confined to the Bombay Presidency, where the horses arriving from the Persian Gulf are first landed. Here the general price given for a Kehailan of the best strains is from 1,500

1 The Duke of Bedford, Lord Warwick, Mr. Vidal and Mr. Stephens, M.P., are also breeders of the pure stock.

to 2,000 rupees before he has been tried for racing, or 2,500 to 3,000 when tried successfully. In the rest of India, Arabs figure mainly as polo ponies, and are run in races of that class when under the standard height. In the palmy days of Arab racing in India, the performances of the best horses were very nearly on a time level with those of our own thoroughbreds.

On the English turf it is rather as a sire of racehorses than as himself a racehorse that the Kehailan is honoured. Few of the imported Arabs, even of the eighteenth century, distinguished themselves as winners; and in the present century, no pure Kehailan has carried off an important race. The last Eastern horse entered for any of our classic contests was in 1863, when the Duke of Beaufort's Barb "Mazagan" ran for the Goodwood Cup, high hopes being entertained of him by his owner and trainer; but in the event he was easily beaten. In 1883, through the exertions of Lord Calthorpe, Lord Bradford, Prince Batthyani, Mr. Edward Weatherby and others, the Jockey Club, in the interests of horse breeding, consented to the establishment of a special race for Arabs, to be run at Newmarket yearly at their July meeting; and a single contest took place in accordance with their decision in the following year. Fifteen Arabians were entered and eight of them appeared at the post, including two that had run well on the Indian turf, with the result that Admiral Tryon's "Asil," a three-year-old colt, bred in England from an Anazeh mare imported in foal from Aleppo, proved the winner. The same colt however was shortly afterwards beaten in a match by "Jambic," an English thoroughbred of inferior class; and this was considered so discouraging that the Arab race has not since been renewed. The superiority of the English thoroughbred on the flat cannot indeed be contested. At the same time it is by no means proved that a new infusion of Kehailan blood would not be an advantage to breeders for our turf; and Lord Bradford's experience is encouraging. From Arab mares mated with Bend Or and Chippendale he has had produce in the second and even in the first generation which have proved winners of good English races, notably of the Dee Stakes at Chester, and he is continuing the experiment.

The practical value however of the Kehailan lies undoubtedly in his *rôle* of sire to half-bred stocks, especially for all such countries as suffer from extremes of heat and cold, drought, poverty of pasture and general hard conditions of life. For this purpose he is inestimable, for he has the power of transmitting to his half-bred offspring his own enduring qualities, with much of his speed, action and courage, and no little of his beauty. In this he is superior to any but the very highest class of our English thoroughbreds, and has been successful wherever he has been fairly tried. Certain rules however are very necessary to be laid down in the choice of Arabians as stallions, the neglect of which will lead to failure; and, as it is a subject not well understood, I think I cannot do better than close this monograph with a few practical suggestions in the interest of breeders.

The first point in choosing an Arab stallion, as indeed any other, for stud use is to be certain of his blood. Unless the horse chosen can show a clean Kehailan pedigree it will always be a matter of chance whether his stock proves satisfactory. Many a stout horse on the Indian turf has proved a despicable sire, and many an unconsidered slug a good one. Apart however from pedigree, and where this cannot be ascertained, there are certain characteristics of shape and figure which very seldom mislead, and a certain ideal type without an approximation to which no Arabian ever yet proved of value as a stock getter. The Arabian points are not very different from those of our English thoroughbred sires of eighty and a hundred years ago; and there are half-a-dozen representations in the collection of *Portraits of Celebrated Race-horses*, which might stand for those of Kehailans of the highest type. Such are "Flying Childers" (the portrait without the saddle), "Sedbury" 1734, "Dungannon" 1780, his grandson "Walton" 1792, his great grandson "Partizan" 1811, and above all, "Sultan" 1816, an almost perfect type of the pure Kehailan. "Actaeon" 1822, and "Venison" 1833, are the latest that show any strong Arabian character in this collection, all the recent portraits having diverged widely from the type. If the reader wishes to contrast the Arab points with those of the modern thoroughbred, he cannot do better than set the portrait of "Sultan" side by side with that of the great modern racehorse Fisherman. Of living "English" sires "Petrarch" and "Bend Or" come nearest to the Kehailan type.

The best Arabian sires are about 14 hands 2 inches high, of great thickness through, depth and substance, but very short on the leg and with the shortest possible cannon bones; the feet large, deep and perfectly round; the legs clean and flat, with a fair amount of bone, say $7\frac{1}{2}$ to 8 inches below the knee; powerful forearms and second thighs; broad knees and hocks; but a greater development of bone than 8 inches seldom goes with the highest quality. The horse should cover a deal of ground, but should have a short back, with just sufficient space between the wither and the rise of the loins for a short saddle. The wither should be high (this is an original Kehailan characteristic found in no other natural breed), but not exaggerated, and the highest point of the croup should be nearly level with it. It is a great point of breeding that the tail should be set on high and that it should rise at an angle of about 45 degs. from the point of insertion, curving however sharply downwards so as just to clear the hocks

in walking. It is no defect that the tail should hang a little sideways, that being often the effect of a twist given it at the foal's birth by the Bedouin breeder for luck. Both mane and tail should be fine as silk and fairly abundant, never heavy. The shoulder should be well sloped, but without the exaggeration of the English hunter's. It should have, however, the freest possible action, and there is no better test of quality than to turn a colt loose in a paddock and take note of how he moves his shoulders and fore-arms. There should be little high knee-action, but the whole limb should be thrown forward and the hoof "dwell" a second in the air before it is put down. This, with corresponding action behind—like that of a deer trotting through fern—is most important in a sire and a great test of quality. The most characteristic point however of all in the Kehailan is his head. It is difficult to describe this intelligibly. It should be very broad between the eyes, the forehead high and slightly convex, but with a sudden upward turn of the profile, such as is seen in the gazelle. This can hardly be too exaggerated. The muzzle should be extremely fine, the lips delicately compressed, the nostrils set somewhat high and on a plane with the face in repose, but capable of great expansion when excited; great depth of the cheek bones and width at the throttle; great distance between the eyes and the ears, the head well set on and the neck arched. The following are the exact measurements of "Mesaoud," bred by Ali Pasha Sherif, the most successful stallion of the Crabbet Park Stud, also of the head of "Sherifa," a Nejd mare bred by the Emir Feysul Ibn Saoud, both admirable types.

Measurements of "Mesaoud" at ten years of age:—Height, 14 hands 2 inches; girth, 69 inches; from summit of skull to wither, 38 inches; from wither to root of tail, 41 inches; tail bone, 18 inches; from summit of skull to point of muzzle, 23¾ inches; round jowl and forehead, 37 inches; round muzzle, 19½ inches; wither to knee, 45 inches; knee to pastern, 11½ inches; point of hip to point of hock, 40 inches; point of hock to fetlock joint, 17½ inches; round forearm, 19 inches; round cannon bone, 7¾ inches; round hoof, 16 inches; length of ear from junction with skull, 5¾ inches.

Measurements of the head of "Sherifa":—From summit of skull to point of muzzle, 24 inches; round jowl and forehead, 36 inches; round muzzle, 14½ inches; width between cheeks 5½ inches.

The best Kehailan colours are—1. Bay with black points. This would seem to have been the original wild colour, and is that principally esteemed by the Bedouins, especially a dark full bay with the black markings well above the knees and hocks. 2. Chestnut, a strong bright chestnut with mane and tail of the same shade, accompanied generally with three or four white feet and a blaze. These markings are commoner among the Anazeh tribes than in Nejd. Pale shades of chestnut should be avoided, but a sprinkling of white hair is no disadvantage. 3. White. This, when quite pure, is perhaps the best as it is the most beautiful of all colours. It is the "fortunate" colour with Mohammedans, and for this reason has been more carefully bred for than any other. The most perfect Kehailan types I have seen have been white, or in advancing years flea-bitten. No Kehailan however is ever foaled white, and

"Bint Nure," Brood Mare.

for the first five years colts go through many changes of coat, from bay, chestnut or nearly black to rose-roan, iron grey and grey. A white stallion should not be used as sire, says Guarmani, till he attains his full white colour at eight years old. White is the favourite colour in Nejd; and all the great collections have been mainly white, notably Ibn Saoud's at Riad, described by Palgrave, Abbas Pasha's in Egypt, and Ibn Rashid's at Haïl. Except in the Sultan's stables at Yildiz, I have never seen a quite black Arabian, and I doubt black being a true Kehailan colour, though Bedouins say it occasionally occurs. Dun, blue-roan, and piebald certainly are not. The skin, where clear of hair, especially round the eyes, should be in all cases of a deep slaty blue. The eyes should be large and prominent, and shaped like the human eye, the white showing well round the cornea. This is very characteristic of the true Kehailan.

The chief modern works to be consulted on the subject are:—

Piétremont's *Chevaux Préhistoriques et Historiques.*
Doughty's *Travels in Arabia Deserta.*
Naturalist's Library, Section by Colonel Hamilton Smith.
Upton's *Newmarket and Arabia.*

Lieut.-Colonel Hallen's *Reports to the Indian Government*, 1892–3.
Palgrave, *Travels in Central Arabia.*
Lady Anne Blunt's *Bedouins of the Euphrates.*
,, ,, ,, *Pilgrimage to Nejd.*
General Tweedie's *Arabian Horse.*
Sidney's *Book of the Horse.*

WILFRED BLUNT.

HORSES—THE BRITISH THOROUGHBRED—**British Ancestry**—What combination of causes produced the British thoroughbred it would be almost futile to inquire, for the combination was in most cases more or less fortuitous, and the extraordinary result must have been, in the last century, quite unexpected. It is not intended here to deal in detail with the origin of our horses, but it may be stated with absolute confidence that while vitality, quality and stamina were gained from Eastern sources, speed was in the first instance derived from the native English breed. This proposition can have its truth on the one part demonstrated to-day by the fact that not the highest caste Arab, however admirable for other purposes, can gallop even as against a polo pony of its own size, while on the other hand we know from Gervase Markham that the native English-bred horses did excel in speed, long before the stud-book was thought of. Thus, he writes :

"Again, for swiftness, what nation hath brought forth a horse which hath exceeded the English?—when the best Barbaries that ever were in their prime, I saw them overrunne by a black hobbie at Salisbury ; yet that hobbie was more overrunne by a horse called Valentine, which Valentine, neither in hunting or running was ever equalled, yet was a plain bred English horse both by syre and dam."

The incident referred to was described as above in the reign of James I , and it may be further gathered that during that reign the public races were contested by a breed distinct from, and more speedy than, Arabs ; that is to say, a native breed, including "hobbies," which had preserved the native distinctions of form and head, but had never been surpassed by the very best Arabs ever raced against them.

"In other words," writes that veteran authority, Mr. Joseph Osborne, "the breed was British because it was Britain that produced its excellence, and it retained the native characteristics in a paramount degree despite any Eastern crosses that may have been in it." The Arab blood exercised a purifying, refining influence which has, by luck rather than design, built up on the native British foundation the extraordinary thoroughbred which we now know ; but it is clear that, without such a foundation, that result could never have been achieved. Many nations have had greater facilities than England for using Eastern blood, but none have succeeded in producing horses of anything like such character, insomuch that the British thoroughbred has to be imported, not merely for racing, but for the production of cavalry remounts and other active horses, to all parts of the world, and without constant recurrence to the parent stock the breed, save in Great Britain and Ireland, can nowhere be maintained without degeneration.

Arabian Blood—Without going further into the origin of the British thoroughbred, it may be stated that every such animal in the stud book of the present day, in this country or in any other, descends in tail male from one of three original Eastern sires, the Darley Arabian, the Byerly Turk, or the Godolphin Arabian, or, to earmark them more clearly by their respective and responsible representatives, from Eclipse, Herod, or Matchem. Of course, in the composition of the horses of that day, a vast number of strains of blood, Eastern and otherwise, was involved, but the prepotency of the strongest lines in tail male gradually asserted itself, till only three families, as above stated, remained. Whereas the Godolphin and Byerly Turk lines were in the late days of the last century and the earlier ones of the present most strongly supported, the descendants of Eclipse have ever since been swamping the others, not only in this country, but all over the world. The extraordinary character of this phenomenon may be proved from the winning statistics of any recent year. Taking at random the season of 1893, we find there were in this country 709 tail male descendants of Eclipse who won 1,298 races, value £384,197, whereas there were but 41 winners claiming descent from the Godolphin Arabian, with 78 races, worth, in all, £19,116 to their credit ; and, from the Byerly Turk, 85 winners of 146 races, worth £33,280. Such a result as this cannot be explained away by the doctrine of mere chance, more especially when it is found that such Godolphin or Byerly Turk winners as exist are built up in almost every line of their pedigrees except the top one by the Darley Arabian.

Original Mares—Rightly to understand this remarkable situation, we have also to analyse descent in tail female, and here the eminent Australian authority, the late Mr. Bruce Lowe, whose *Breeding Racehorses by the Figure System* has already become a classic, renders invaluable assistance. He carries us back, not to the original sires, but to the original mares, and though these are more numerously represented in tail female at the present day than are the original sires in tail male, we none the less find an almost similar phenomenon—that a very few of them monopolise all the important winners of the past and present. Mr. Bruce Lowe based his figure system on the plain common-sense idea of judgment by results, and placed the original mares in order, 1, 2, 3, &c., in accordance with the number of classic winners (counting only Derby, Oaks, and Leger) which had descended

in the female line from each of them. He also dealt with the further attribute of sire potency, inherent in certain of these families and due to robust native blood. These families he classed as "sire families," and attached to them an importance altogether apart from the order of merit by winning results, though number 3 family comes out successful under either test. and is, by consequence, perhaps the best family of all. To present a reasonable idea of this system, we give a list of the original mares placed in order according to classic results, the "sire families" being printed in black letters, and a sample or two of her descendants being given after each mare. The first five families are classed by Mr. Bruce Lowe as "running families," and are printed in italics, except No. 3, which, being also a sire family, is printed in black type.

THE ALLOTMENT OF FIGURES.

No.	*Original Mares.*	*Descendants.*
1	Tregonwell's Natural Barb mare	Whalebone, Minting.
2	Burton's Barb mare	Voltigeur, Blacklock.
3	The Dam of Two True Blues	Stockwell, Sir Peter.
4	Layton Barb mare	Matchem, Thormanby.
5	Dau. of Massey's Black Barb	Gladiateur, Hermit.
6	Old Bald Peg	Priam, Diomed.
7	Darcy's Black Legged Royal mare	W. Australian, Donovan.
8	Bustler mare (dam of Byerly Turk mare)	Marske, Newminster, Sultan.
9	Old Wintner mare	Mercury, Bendigo, Peter.
10	Dau. of Gower's stallion	Blair Athol, Hampton.
11	Sedbury Royal mare	Regulus, Birdcatcher, St. Simon.
12	A Royal mare (Montagu mare)	Eclipse, Sterling, Prince Rudolph.
13	A Royal mare (dam of Turk mare)	Highflyer, Orlando.
14	The Oldfield mare	Touchstone, Macaroni.
15	Royal mare (dam of Old Whynot)	Soothsayer, Jerry, Coxhall.
16	Sister to Stripling by Hutton's Spot	Ormonde and Agnes family.
17	Byerly Turk mare	Pantaloon, Vattendon.
18	Old Woodcock mare (dam of Old Spot mare)	Waxy, Trenton (Aus.)
19	Dau. of Davill's Old Woodcock	Isonomy, Sir Hugo.
20	Dau. of Gascoigne's Foreign horse	Citadel, Traducer (N.Z.), Ghuznee.
21	Moonah Barb mare	Sweetmeat, Lonely.
22	Belgrade Turk mare	Gladiator, St. Blaise.
23	Piping Peg	Ossian, Barcaldine.
24	Helmsley Turk mare	Camel, The Baron, Hindoo (Am.)
25	Brimmer mare	Y. Melbourne, Comus, Sefton.
26	Merlin mare	Herod, Promised Land.
27	Spanker mare	Saunterer, Pero Gomez.
28	Dau. of Place's White Turk	Emilius, Dalesman.
29	Natural Barb mare (dam of Bosset Arab mare)	Landscape, Ashton.
30	Dau. of Duc de Chartres' Hawker	Paris, Delpini, Stamford.
31	Dick Barton's Barb mare	Ruler, Fazzoletto.
32	Barb mare (Dodsworth's dam)	Nike, Fitz Gladiator.
33	Sister to Honeycombe Punch	Sergeant, Dungannon.
34	Hautboy mare	Antonio, Birmingham.
35	Dau. of Bustler	Haphazard, Bustard (Castrel).
36	Dau. of Curwen's Bay Barb	Economist, Old Engineer.
37	Sister to Old Merlin	Dr. Syntax, Little Red Rover.
38	Thwait's Dun Mare	Pot-8-os.
39	Bonny Black	Dagworth (Aus.).
40	Royal mare (dam of Brimmer)	Boston (Am.).
41	Grasshopper mare	Bagot, Portrait.
42	Spanker mare	Oiseau, Cestus.
43	Natural Barb mare (Emperor of Morocco's gift)	Balfe, Underhand.

It would be absurd to produce here any mere theories, but results render the figure system incontrovertible. To put it in a nutshell, there have been 358 winners of the Derby, Oaks, and Leger, and the original mares still represented number 43, or rather more; but of the 358 winners no fewer than 202 trace in tail female to those *five* original mares whom Mr. Bruce Lowe numbered as the "running families."

A remarkable confirmation of this position has been furnished by the eminent German authority, Mr. Hermann Goos, who for some years past has published pedigree tables tracing all horses that are or have been of note in England or on the Continent to their original female sources. He has in his last edition adopted Mr. Bruce Lowe's figures, which, as already explained, are based only on the results of the English Derby, Oaks, and Leger, but the record of these original mares based on all the other big races in England and on the Continent comes out substantially the same; and of the 50 original mares from which Mr. Goos traces descendants of some note, there are no fewer than 11,618 representatives indexed and accounted for in his tables. These are animals that have won in France, Germany, Austria, and elsewhere, besides England, from the last century until now, and of these no fewer than 4,622—a really amazing proportion, all things considered—descend from the first five mares out of the fifty; in other words, from the "running" families.

It follows almost as a necessary consequence of the above facts that a prudent breeder of bloodstock will, so far as tail male representation goes, secure as much of the Darley Arabian as possible in any proposed pedigree, and in the tail female line at all points will follow without hesitation Mr. Bruce Lowe's figures, which simply show "form at a glance," and are no matter of mere scientific theory. To make the application of the figure system perfectly plain, a brief statement of a pedigree is here given, viz., St. Simon (11) by Galopin (3) out of St. Angela by King Tom (3). The figures indicate that St. Simon himself belongs to the No. 11

family (The Sedbury Royal Mare), and the same figure would of course attach to his dam and every other ancestress in tail female up to the original. Galopin, the sire of St. Simon, is of the No. 3 family (the dam of the two True Blues), as also is King Tom, the sire of St. Angela; and so the pedigree may be extended, the figure being added to each fresh horse in the combination, and showing at once how much of the most successful blood is represented.

The Stud Book—The first edition of the first volume of the *General Stud Book* was published in 1793, and the eighteenth volume has recently been issued by Messrs. Weatherby, whose firm has throughout maintained a high standard of accuracy in the work. No animal can be unconditionally admitted to the book whose pedigree cannot be traced at all points of it to the first volume; but as a question has arisen over the admission of Australasian and American bred race horses, which in some cases take in strains native to their own countries, their inclusion in the English stud book is subject in each instance to a note of reference to the Australian or American stud book, as the case may be. In France, Germany, and throughout the Continent, the race horses are purely English in blood.

The result of the last hundred years of careful breeding and development has been a distinct and continuous improvement of the breed both in size, power, and quality. It is thought by many that the prevalence of short distance racing and the early forcing of yearlings for sale and two-year-olds for racing has to some extent impaired constitution, soundness and stamina, and there may be a certain amount of truth in this view, more especially as the Irish bred horses, reared under more natural conditions, have of late been carrying all before them on the English turf; but there can be no real doubt that such horses as Isinglass, Persimmon and Galtee More—to mention only three of the best of recent years—can challenge comparison with any that have gone before them, both as commanding specimens of the horse in his highest development, and for first-class racing capacity over any distance.

Eclipse, Matchem, Herod—At the present day the descendants of Eclipse enormously outnumber the other two lines. Of Eclipse's three grandsons that survive in their descendants, Waxy is far the most numerously represented, as from his sons, Whalebone and Whisker, we get the great houses of Birdcatcher, Touchstone and Harkaway. Of these, Birdcatcher has asserted and is asserting supremacy, mainly through Stockwell, the most extraordinary sire of all time, whose blood is coming more than ever to the front this year through Kendal and others of his tail male descendants. The advent of Galopin, however, revived the Blacklock or King Fergus branch of Eclipse; and the Joe Andrews branch still lives pretty vigorously through the sons and grandsons of Beadsman. All these various branches of Eclipse, as now represented, differ widely in character, the Stockwells being remarkable for size, power and bone, the Galopins for light, wiry, bloodlike frames and fiery, excitable courage, the Beadsmans for truth of symmetry in a medium scale of size.

Matchem lives to-day only through Melbourne, and he again would all but have died out but for Solon. The characteristics of the family are well known. A typical member of it is heavy, very lengthy, lop-eared and short of quality; yet there have been brilliant horses among them, such as West Australian and Barcaldine. These however were very strongly fortified with Eclipse blood. Mares of Melbourne blood have been very successful, and Persimmon, no doubt, owes his size, bone and power to his dam having two Melbourne crosses.

The Herod line is but feebly represented to-day through descendants of Sweetmeat, Ion, Thormanby, the Flying Dutchman, and Lexington, the last-named of whom had three native American crosses. The characteristics of the family (not including Lexington) are neatness and quality rather than size or bone, though this cannot be said of the Wild Dayrells. Here again the blood has proved valuable in the making of brood mares, those by Macaroni at the present day being remarkably successful, while it was a Flying Dutchman mare that produced Galopin.

Breeders and Sales—In the last volume of the *Stud Book* 5,239 brood mares are accounted for in the year 1896. It is therefore apparent that the breeding of bloodstock is conducted on a very large scale in this country. The age of the thoroughbred horse dates in England and on the Continent from the 1st of January; in Australia it dates from the 1st of August, and this fact alone renders any weight for age comparison between English and Australian horses almost impossible. In England thoroughbred stock is largely bred for sale as yearlings, but a number of the leading supporters of the Turf, such as the Prince of Wales, the Duke of Westminster, the Duke of Portland, the Marquis of Zetland, the Earl of Durham, Sir J. Blundell Maple, Bart., the Earl of Rosebery, Mr. Leopold de Rothschild, Mr. Douglas Baird, &c., breed their own racing stock, and have this advantage over public breeders that they have not to make up their yearlings for sale, and are also able to place them all in the charge of first-rate trainers, so that each one gets a fair chance of showing any merit it may possess.

The principal sales of yearlings are held at Ascot, the Cobham Stud, the Newmarket July

Meetings, and at Doncaster, when very high prices are often realised, 6,000 guineas paid by Sir J. Blundell Maple for Childwick being the highest up to date. The December sales at Newmarket consist mostly of brood mares, foals, horses in training, and stallions. There is scarcely any limit to the value of the thoroughbred horse now that the stakes to be won are of such immense value, and a stallion like St. Simon can command a 500 guineas fee. Ormonde was actually sold for 30,000 guineas, and a similar sum was refused for Galtee More. Offers of 20,000 guineas each made by the late Colonel W. P. Thompson, of Brookdale, U.S.A., for Orme and Ladas were also refused, and Mr. J. E. Platt gave the equivalent of 20,000 guineas for Kendal. Sir J. Blundell Maple paid 15,000 guineas for Common.

THOROUGHBRED.

Yearlings, according to their growth and development, go into the trainer's charge at an early or late period of the second half of the year, and they are very commonly tried before the season is out. The merits of Bend Or were ascertained by Mr. Robert Peck in the September of that great horse's yearling days.

General Character of the Thoroughbred—Thoroughbred horses are mostly bay, brown or chestnut in colour. There are also greys, roans, and blacks, but never piebalds or (in these days) duns. Bred primarily for racing purposes, they have long since been found to be of almost inestimable value for the improvement of the breed of horses at large, excepting of course those devoted to heavy draught work. The severe test of training and racing proves better than anything else could do what really are the soundest and best constitutioned animals to breed from. The blood horse is infinitely superior to all half-breeds and commoners in the matter of courage and endurance. Even when degraded to the shafts of a hansom he thoroughly vindicates his class. The distinction was never more clearly marked than when the R.H.A. horses were returning from Egypt after Tel El Kebir, and some came in for shocking weather. On one transport they were overbalanced by the rolling of the vessel, and something over seventy of them simply lay and died. These were the commoners. But a thoroughbred Rosicrucian mare, though she was down at least a dozen times one night, always struggled up again and reached England fit and well. The value of a troop horse or hunter depends almost entirely on the number of crosses of blood that he has in him, no matter how good-looking he may be; and an actually thoroughbred hunter or charger is far away the best of all, but when up to weight is too valuable to suit average purses.

If it be asked wherein consists the individual character of the British thoroughbred, the answer is by no means a ready one; but it may be stated with confidence that the general confor-

mation is one tending alike to speed and endurance — lengthy, oblique shoulders, deep brisket without width of chest, and yet plenty of heart room through the fore-ribs; greater length than in any other breed from hip to stifle and from stifle to hock, so that the hind stroke may resemble that of a greyhound; and that whether the horse stands high behind on a straight hock like Persimmon, or has the more regular type, or has "sickle" hocks, or hocks right away from him. One way or another he must have *length*, and compensating balances of action will often enable the most oddly shaped animal to defeat what seems a more level built one. Conformation, however, is only the outward show. The real value of the British thoroughbred is the vital essence which does not appear on the surface. In this connection it need only be observed that some lines of blood are inferior in gameness and constitution. The Hermit line is conspicuously at fault here so far as tail male descent goes, but curiously enough this breed has a great aptitude for jumping and is in its element at National Hunt Meetings.

Briefly, it may be stated in conclusion that the British thoroughbred is the most perfect animal of any sort yet produced in the world; that his value in improving all other breeds of horses except those devoted to heavy draught work is simply inestimable; that without racing, however, he would never have been produced, and without the continuance of racing his individual soundness, courage, and constitution could never be discovered. These are facts which it is hardly possible to question, and, as there is every reason to suppose that the sport of racing in this and other countries will continue to flourish, we may be pretty sure that the thoroughbred horse will go on from strength to strength, as he is more and more carefully bred.

W. Allison.

HUNTERS—If the combination of means, opportunity, and no more than a moderate bodily weight enable a man to own a thoroughbred hunter, he can desire nothing better. The blood horse is at all times, and, in the writer's opinion, in every country, the pleasantest and, as often as not, the easiest to ride. He can skim over Leicestershire, surmount the formidable earthworks which divide field from field in Devon, and can prove himself quite a hunter in every intermediate kind of country. If, therefore, the man who can ride can mount himself on a thoroughbred horse, so much the better for him; but the novice may well content himself with a more ordinary animal until he has learned enough to be able to utilise to the full the advantages the blood horse offers to him who really means "going."

It is a wonder that more men do not attend the various bloodstock sales and pick up some of the cheaper yearlings and two-year-olds. Plenty of "rubbish" is bred annually; but a horse as "slow as a man in boots" for racing purposes is nevertheless a fast hunter, while an unfashionable pedigree does not matter for the hunting field. Of course these youngsters will require to be thrown by and forgotten for a year or two, and they would be out of place in the stable of any one who cannot himself make them into hunters or obtain the services of some one who can.

As, however, the thoroughbred hunter is not common, men must ride something else, and hunters vary in character as much as they do in size. In the field one sees every possible type, from the horse which only just misses being thoroughbred, the old "cocktail" in fact, down to something very nearly related to the cart-horse; while in size they range from fourteen to seventeen hands, with an occasional specimen below and above these heights. Thus it is

Light-Weight Hunter.

practically impossible to put forward any stamp of horse as the true type of hunter, except in the highest class of horses, horses fit to carry fourteen stone and upwards up to the tail of the hounds in a stiffly fenced country.

Just as the tyro at fiddling can do with a less valuable instrument than a "Strad" or a "Joseph," so the novice at hunting can enjoy a great deal of amusement on a very moderate priced mount. Yet even this cheap conveyance must possess certain attributes. He must, of course, be workably sound; and here let it be written down as a rule never to be broken that no one should, under any temptation of price, buy a roarer. In nine hundred and ninety-nine times out of a thousand the infirmity will grow worse with each succeeding season; while the noise is unpleasant both to the rider and other members of the field. Again, no horse with defective vision should ever be bought for hunting

purposes, nor should the purchase of a horse suffering from fever in the feet or navicular be entertained, for no humane man would find pleasure in riding a horse which is suffering from pain, not to mention the fact that a steed so affected would bring next to nothing if offered for sale. Opinions differ as to the risk in riding "nerved" horses; but the novice had better keep clear of them.

The hunter on which early experience is gained should be temperate and bold, that is to say, he should go at his fences only just quick enough to inspire his rider with confidence, and jump his places cleanly enough to show the beginner that a fence is not such a terrible affair after all. A lad or man who learns on a slow sticky jumper will be a very long time in acquiring the art of getting readily over a country; but as the beginner will not be in a position to sit down and ride with the best and boldest, it will be no harm if his early mounts be rather aged and show some amount of wear. They will know their business, and teach the learner his, while blemishes, of course, will not matter in the least. Make and shape, however, must not be left out of consideration, not merely because a nicely made horse is pleasant to look upon, but because without a certain conformation a horse is no good for use in the hunting field. A horse with bad shoulders is not comfortable to ride; he will never gallop freely, and is very likely to fall when going down hill. Good quarters and hocks are equally necessary, or he will never spread himself over his fences or get up hill; if he is somewhat long in the back it does not matter. It is a cardinal defect in the show ring; but except when a very heavy weight has to be carried it makes little difference in the hunting field.

The visitor to a fashionable country, such as the Quorn, Pytchley, Mr. Fernie's, the Cottesmore, and others will at once be struck by the number of fine horses to be seen at the covert side. A few may be home-bred, and a few picked up by chance at comparatively small sums; but the majority will have been bought from dealers at a high price. The dealers making hunters their chief line of business have agents all over the horse-breeding districts, and they themselves travel about to pick up all the horses which they deem saleable. They have to be transported home, in many cases schooled and brought into better condition; frequently credit has to be given; and accident, disease, and death have to be reckoned with, so that by the time a really good horse reaches the buyer's stable he has cost a good deal of money. Any one, however, who has once ridden a really perfect hunter will cease to wonder at the large sums of money given for horses of the right kind. The hunter which can gallop fast, will not turn his head from anything, wants no rousing and but little holding, one that skims over water, and can jump timber, that will walk through a gap, and so spread himself at his fences as easily to clear an unexpectedly wide ditch on the far side is not to be picked up every day, and when found must be paid for.

Still there are hundreds of men who cannot afford hunters costing from a hundred and fifty to four hundred guineas, and who have, of necessity, to put up with something cheaper, though it must not be supposed that a long price necessarily means a good horse; while, on the other hand, many a first-rate hunter is bought at quite a low figure, and it frequently happens that a horse regarded by his owner as being no more than middling is found, when the question is asked him, to possess galloping and jumping abilities of a high order. Nor must it be forgotten that much, very much, depends upon the man in the saddle, for some men could never show to advantage on the most brilliant hunter that ever looked through a bridle, while others will "shove along," to use an expressive hunting field phrase, on almost anything.

HUNTER.

The upstanding, weight-carrying hunter necessarily commands the most money, owing to his scarceness. He must show as much quality as possible, and be able to gallop and jump with the lighter horses; and hunters fit to carry men like the late Mr. Heywood-Lonsdale, Master of the Shropshire, or the late Mr. Bisset, for so many years Master of the Devon and Somerset Staghounds, can only be found now and then. No one at present has discovered how to breed these weight carriers to order, and they are entirely chance bred animals. Occasionally a thoroughbred horse gets a weight carrier from a mare which may not be of any great power; sometimes a cart stallion or a cart mare is responsible for a great strong horse in which cart blood is not observable, but it is seldom that two weight carriers

are bred by the same parents in two successive years.

The light weight rider has a very wide field open to him from which to mount himself, as he can either ride weedy well bred, or thoroughbred horses, or can get along on smaller horses, horses, that is to say, which would bring good money were they but a little bigger; but, although people talk a good deal about the excellence of little horses, the almost universal feeling is in favour of horses from about 15 hands 3 inches to 16 hands 1 inch in height, and a horse standing less than 15 hands 2 inches must have a very grand reputation to realise a long price. Here then is the light weight's opportunity; he can afford to buy misfits of all kinds, while, if he be a good horseman, he can afford to disregard sundry little peculiarities of temper and temperament which would cause the horse to be rejected at once by any one ready to pay a good price for a hunter approximately perfect.

One hears a good deal at times of the horse for this country and the horse for that; but much of it is pure theory. One or two propositions certainly stand out prominently, one of them being that an indifferent horse is of no earthly use in the shires. If his rider does not want to jump he must at any rate gallop from gate to gate; but if a man "goes" on the grass he must have a good horse. But the horse for Leicestershire is also the best horse for everywhere else, and in no hunting country in England does the workman buy an indifferent hunter if he can afford a better. Mr. Charles Brindley, better known perhaps under his pseudonym "Harry Hieover," wrote in one of his books that a fifty pound hack was quite good enough for Surrey. Well, if any of the packs hunting over that county find a good fox on a good scenting day and get away on good terms with him, any one who thinks a common horse good enough for Surrey will learn the erroneousness of his opinion, especially if the line happen to lie in one of the Vales, the Godstone Vale, for instance. "Do you call the Blankshire a difficult country?" a young man is reported to have asked of a Nestor of the Chase. "My friend," was the reply, "all countries are difficult when hounds really run," and this should be kept in mind by horse buyers. In Essex, with its interminable plough, a stranger would scarcely imagine that there is ever much of the gaudy side of fox-hunting to be seen, but let him be out when scent lies and a stout fox is before the hounds, while the going is deep; the best horse in England will not then be found too good for the occasion.

It has often been said that you want nothing more than a cob in order to enjoy the sweets of hunting the wild stag on Exmoor or the Quantocks. There are many days on which a cob would suffice for Leicestershire or Northamptonshire; but the man on a cob who happened to be in a fine run which came off with the Devon and Somerset during September in the present year (1897) would have seen very little of it. Similarly, in the more wooded portions of Kent and Sussex, it will be found that the best horse procurable is better than an inferior conveyance.

So far as regards the physical characteristics of different countries, horses very soon grow accustomed to a change of fences. A Leicestershire horse would not be long in mastering the banks of the Blackmore Vale, or even the big banks to be found further west, but it is to be noted that, as a rule, a horse used to a flying country becomes clever in a cramped or banking country in less time than a horse accustomed to banks learns to jump freely in a flying country. Many Irish hunters, when they first come into the hands of English dealers, are by no means free jumpers, and take no little time to school before they perform in a manner which will commend itself to the buyer who desires to ride over a flying country; but a horse which may be regarded as somewhat rash over this description of country soon learns not to rush at banks, and quickly gives up attempting to fly them. Although, then, one can scarcely have too good a horse for any country, a man may have too good a horse for himself; that is to say, if a man does not jump, there is no necessity for him to go to the expense of buying a hunter fit to go anywhere. With respect to those good sportsmen who can afford small sums only for their horses, it may be asked where do the fifty and sixty pound horses—many seen in the field cost less—come from? They come from everywhere. A hunter out of an unknown stud sent to the hammer never realises much; a horse which will not go in harness or into a horse-box has a good deal of his value knocked off, while a tendency to pull or be light-hearted is amongst the causes which make hunters and other horses pass from hand to hand at little money.

And now just a word to the inexperienced on the subject of buying horses. Buying at auction is very dangerous, unless a man be a very good judge and know something about the horse he proposes to buy; nor should the novice rely upon his own judgment when buying privately.

There is no royal road to buying a hundred pound horse for half that sum, nor for obtaining a fifty pound horse for twenty-five pounds; so the beginner should at once abandon all idea of bargain hunting. Those who live in the country can generally hear of a horse by mentioning their wants to their friends, and when the time comes for selling the cub-hunters by auction a suitable mount can generally be obtained, or recourse can be had to a dealer who deals in the kind of horse required. It is a very common idea that every horse-dealer is a rogue, but there

are just as many honest men in that calling as in any other, and if the beginner go to a respectable dealer, tell him what he wants, and the price to which he is prepared to go, he will probably not have reason to repent his line of action.

W. C. A. Blew.

Glossary.

Arm—The upper part of the fore-leg, from just below the *withers* (*q.v.*) down to just above the elbow. Generally called **shoulder**.

Bars of the Foot—Portions of the wall or crust of the foot, which turn inwards and upwards at the base of the foot near the heel, and then run nearly parallel to the sides of the *frog* (*q.v.*).

Bars of the Mouth—The intervals in a horse's jaws between the tushes or canine teeth and the grinders. Upon this smooth interval, which occurs just at the angle of the lips, the bit is placed.

Bay—A reddish nut-brown colour. Usually the term is applied to dark horses, but when a light bay is spoken of, a horse of yellow sunlight colour is intended. Bay is apparently the original colour of the Arab horse, probably with black points.

Bishoping—The practice of artificially modifying the appearance of horses in order to improve their price, usually by making them appear younger. The especial point worked upon is the teeth.

Blaze—A stripe of white down a horse's face.

Blue Roan—[*See* Roan].

Brisket—The lower part of a horse's chest, just behind the fore-legs.

Buck Knee—A knee joint which recedes from the front, instead of presenting a straight line from forearm to fetlock.

Calf Knee—A knee that bends sideways towards its fellow; similar to knock-knees in man.

Calkin or **Calk**—A spur projecting downward from a horse's shoe in order to prevent it from falling in slippery weather.

Cannon Bone or **Canon Bone**—The bone uniting knee joint and fetlock in the fore-leg, hock and fetlock in the hind. Also called **shank**.

Castors—Horny excrescences growing on the inside of each leg, just above the knees and below the hocks. Also called **chesnuts** and sometimes **ergots**.

Chanting—Originally, singing unjustified praises of a horse for sale, hence any form of swindling with unsound horses.

Chesnut—(1) *See* Castor; (2) A reddish colour, similar to bay, but usually lighter.

Chin Groove—The depression behind the horse's lower jaw in which the curb-chain fits.

Clicking—A defect in a horse's paces, which causes him to knock his feet against one another when he is trotting or galloping. Also called **forging**.

Cob—Any compact, short-legged horse.

Coffin Bone—The bone in the centre of the hoof.

Commissure—The natural clefts of a horse's foot. They are three in number, one down the centre of the frog, the others between the bars and the crust.

Coper—Any dealer in horses whose integrity is uncertain.

Coronet or **Coronary Process**—The bony fringe, partly consisting of an enlargement of the lower end of the small pastern, which surrounds the top of the hoof.

Cow-hock—A hock that approaches sideways to its fellow, thereby bringing the shanks of the hind-leg unduly close.

Croup—The upper part of the body forward from the insertion of the tail to the lumbar vertebræ, which constitute the **loins**.

Crust of the Feet—The horny outer portion of the hoof.

Dappled—Epithet of a coat more or less plentifully sprinkled with rings or spots of a darker colour.

Dishing—A peculiarity in a horse's action which causes him to throw out his feet sideways as he brings them up in a trot. (This action is admired in Spanish horses.)

Dock—(1) The stump from which the hairs of a horse's tail depend; (2) *Verb*: to cut this stump to a shorter length with the idea of improving the horse's appearance.

Dun—A dull dark brown. Horses of this hue have generally black extremities, and a black line down the back. Another authority says that "dun" means yellowish-sandy. This is probably the original colour of the wild horse of Northern Asia.

Elbow—The backward bony projection from a horse's fore-leg just below the junction of leg and body.

Ergot—The horny excrescence just at the fetlock joint, from which the fetlock itself depends. Sometimes applied to the castors or chesnuts higher up the leg.

Ewe Neck—A thin, hollow neck.

Fetlock—A lock of hair, usually short, depending from the back of the fetlock joint, which is itself the junction of the pastern and the shank or cannon bone.

Flank—That part of the horse's side which is free from bone, *i.e.*, between the ribs and the hip.

Fleabitten—A white coat plentifully marked with small red or dark spots. A favourite Arab colour, but indicative generally of age, as the spots seldom appear before the eighth year, often much later.

Forearm—That part of the fore-leg which lies between the knee and the junction of the leg with the body.

Forehand—The shoulders, arm, and forearm of a horse.

Frog—The triangular protuberance which forms in the centre of the bottom of a horse's foot.

Gaskin—That part of a horse's hind-leg between the hock and the junction of the leg with the body. Also specifically called the leg, and sometimes the thigh, or the *false thigh*.

Goose-rumped—A horse with buttocks that fall away sharply from the croup; tail set low. Common in Barbs or Spaniards.

Grey—The colour of coats that are composed of a mixture of black and white hairs, varying in proportion as the horse is dark or light grey, the coat growing lighter with age.

Haunches—The fleshy part of a horse's back at the junction of body and hips.

Hip—The top joint of the hind-leg, at the junction with the pelvis.

Hock—The backward-bending joint on the hind-legs, formed by the junction of the shank, or cannon bone, and the bone of the upper leg, or tibia.

Hoof—The horny box which encloses the extremities of fore- and hind-legs.

Infundibulum—[*See* Mark.]

Knee—The forward-bending joint of the fore-legs, formed by the junction of the shank, or cannon bone, and the bone of the forearm, or radius.

Loins—That part of a horse's body between the ribs and the pelvis and hips.

Mark—The hollow upon the top of a young horse's teeth which wears down with years, and is, therefore, valuable as an indication of age. Also called *infundibulum*.

Over at the Knee—Descriptive of a horse whose knees, either from congenital defects or from overwork, project forward.

Pastern—The bone joining hoof and fetlock joint.

Piebald—Strictly, the colour of a coat which consists of patches of white and black, but often used for a horse of any two colours. [*See also* Skewbald.]

Points—Those qualities of shape, action, and constitution, which determine a horse's value or worthlessness.

Ragged Hips—Hips that stand well away from the backbone.

Rat-tailed—Descriptive of a horse that has lost all, or nearly all, his tail hairs.

Red Roan—[*See* Roan.]

Roach Back—A back which slopes downward from shoulder to croup, owing to undue convexity. Usually accompanied by flat sides and a narrow chest.

Roan—The colour of a coat chiefly of a red or blue character, but closely flecked with grey hairs. According to the ground colour it will be blue roan, red roan, or strawberry roan.

Roughing—The turning up of *calkins* (*q.v.*) on a horse's shoe when cold has made roads slippery.

Shank—[*See* CANNON BONE].

Shoe—A loop of iron nailed on to horses' feet to preserve them from the rough wear of the roads.

Shoulder—The upper part of the fore-leg, from its junction with the body to the shoulder joint. Also called the *Arm*.

Sickle Hocks—Hocks that bend unduly backward.

Skewbald—The colour of a coat which consists of patches of any two colours except white and black. Such horses are properly called *Piebald*. Supposed to be an original wild colour in Eastern Asia. It is the favourite colour among the Gauchos of South America.

Snip—A small patch of white upon a horse's nose.

Sorrel—The colour of a coat which consists of yellowish- or reddish-brown hairs.

Splint Bones—Small bones running from hock or knee to fetlock parallel with shank bone.

Star—A square patch of white upon a horse's forehead.

Stifle—The joint at the junction of the hind-leg and the body, between the gaskin and the thigh proper.

Thigh—The upper part of the hind-leg, bounded beneath by the stifle, and above by the croup.

Wall of the Foot—[*See* CRUST].

Well ribbed up—Descriptive of a horse in which the lower ribs curve well back towards the hind-quarters, and do not leave too much flank exposed.

White Stocking—Descriptive of a horse otherwise dark or brightly coloured, which has the lower portion of one or more legs white. Three white stockings, the off fore-leg being dark, is the favourite arrangement of colour among the Bedouins of Arabia.

Withers—The highest point of a horse's back, just behind the neck.

[For diseases *See* VETERINARY WORK.]

HOUND BREEDING—Within the last thirty years the facilities for breeding fox-hounds of high class have been greatly increased. Before the *Fox-hound Kennel Stud Book* was published, the task of the M.F.H. who wished to study the pedigrees of the inmates of other kennels was an arduous one, for unless he could obtain access to the kennel-books of the leading establishments, he had to content himself with the meagre hound lists that appeared from time to time in the sporting magazines.

Stud Books—Mr. Cornelius Tongue, perhaps better known as "Cecil," in his preface to the *Stud Book*, published in 1866, complained of the difficulties that he had met with in procuring reliable information from some kennels, but the publication is fairly accurate, and, if the time occupied in tracing a pedigree in his *Stud Book* compares unfavourably with the ease with which reference can be made to the recent volumes, compiled with such admirable care, yet no lovers of well-bred fox-hounds should forget the boon which Mr. Tongue has conferred upon them.

To quote from his preface, "The principles observed by successful breeders of race-horses in the selection of sires and dams that have distinguished themselves on the turf and in the stud, are identical with those laws of nature which govern the pro-creation of fox-hounds. It will invariably be found that those animals are most to be depended upon for the perpetuation of their species whose genealogy can be traced in the greatest number of direct lines to great celebrities of olden times; the most valuable strains of blood may be readily recognised by reference to the *Kennel Stud Book*, and they will be found to be most copiously diffused throughout those packs which are in the greatest renown. It is the peculiar faculty of a highly bred and highly endowed animal to convey his type to posterity. An inferior bred hound may evince great superiority in his work, but the qualities of his progeny will be very uncertain. Hence the importance of accurate records of pedigrees."

In the *Stud Book* which follows, lists are given of fifty-three packs of hounds, with an appendix of the most important sales between 1851 and 1865; in addition to these the appendix contains several interesting pedigrees of famous hounds of the day, including the great "Furrier," known as Mr. Osbaldeston's, which was, however, bred at Belvoir in 1820.

In the succeeding volume of the *Fox-hound Kennel Stud Book*, which covers from 1865 to 1885, it is to be regretted that no hound sales are chronicled; but the book itself is far better arranged in other respects than its predecessor for easy reference, whilst in the volumes published in 1891 and 1896, valuable appendices are to be found containing particulars of sales.

Literature of the Fox-hound—In 1854, Mr. Tongue enriched the literature of sport by his *Records of the Chase*, in which students of hound lore will find much interesting matter; whilst other volumes more easily obtainable and of the greatest value are Beckford's *Thoughts upon Hunting*, Vyner's *Notitia Venatica*, and the *Diary of a Huntsman* by Thomas Smith (Craven Smith). In the last-named work, published in 1838, Chapter V. (on fox-hounds) is considered by many to be the best of all expositions on the subject; indeed, in its excellent pages the whole question of hound breeding is summed up.

"A mute hound is unpardonable; if he should be in every other respect perfect, so much the greater reason for drafting him," and "the two great points to attend to in breeding are stoutness and nose." If the hound breeder of to-day would treasure these, and, indeed, all other sentences in this admirable chapter, trite as some may seem to be, bad hounds would be scarce.

Another book containing most valuable information with regard to hounds is the *Noble Science*, by F. P. Delmé Radcliffe, who was Master of the Hertfordshire Hounds from 1836 to 1839. In this work, Chapter III. deals entirely with the fox-hound, and what he should be in the opinion of the author and others. This chapter is headed by an engraving of the stamp of hound which Mr. Radcliffe considered to be best suited to his country, and it is evident that he much admires the description of the hound by Somervile a century before. He advocates:

"A hound of middle size, active and strong," though he qualifies the poet's desideratum, a "round cat foot," by stating his experience of hounds thus endowed getting "toes down" sooner than others. It is doubtful if many modern lovers of hounds agree with Mr. Radcliffe in his fondness for "arched loins, or wheel backs with an inclination to drooping quarters," which he fancies are better adapted to hills. In this chapter, too, is mentioned an experiment of crossing a blood-hound with a fox-hound bitch with a view to improving the nose of the fox-hound; this, it appears, was not attained. The whole of Mr. Radcliffe's book is the work of a scholar and a sportsman.

Besides the works above alluded to, after a perusal of the writings of the "Druid" and "Scrutator," together with the books and contributions to magazines by "Nimrod," and the volume on "Hunting" from the *Badminton Library*, the student of fox-hound pedigrees will find in the Stud-books an absorbing interest.

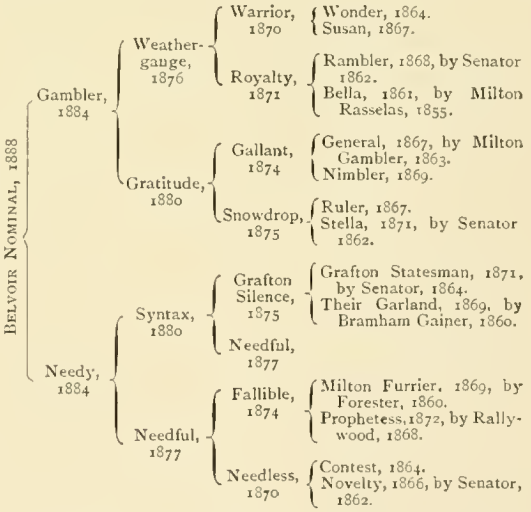
Size—There is to be found, in the various books on hunting, a great difference of opinion as to the proper size of a fox-hound. Mr. Meynell's dictum is recorded that the *height* of a hound has nothing to do with his *size*; while Mr. Assheton Smith, according to the "Druid," changed his opinion on the subject during his Mastership of the Quorn. At first he swore by small hounds, and there was hardly a dog-hound at Quorn above 23 inches; but, on his hounds happening to clash with Lord Lonsdale's pack, and six couple of the latter being counted first away from Launde Wood, it struck him that the smaller hounds were at a disadvantage in jumping over the briars, and he set to work raising his standard until his dog-hounds were as near 25 inches as possible, and the bitches as much over 23 as they could be got.

Much has been said of different stamps of hounds for different countries, but there seems to be little doubt that by breeding from the very best blood only, and "avoiding lumber in any shape," as Mr. Radcliffe puts it, a pack of hounds can be obtained that can carry a good head over rough moorland, cold ploughs, and pastures equally well. "Quickness in working and catching for a scent" is all important; and here it is that blood tells.

Pedigrees—A glance at the list of packs in the Volume (V.) of the *Stud Book* published in 1896, will show that Ireland and Scotland are only represented by two packs each; whilst in England the south-west may be said to be the most benighted. West of the Cattestock, the list of one pack only, the Dartmoor, is found to be worthy of insertion; whereas, in the book of 1866, Devon and Cornwall enrolled four packs between them. With the exception of this district, the inaccessibility of good fox-hound blood can be no excuse for a deteriorating kennel nowadays, while the number of spectators at the Peterborough Hound Show speaks for itself. On an examination of the pedigrees of the prize-winners at Peterborough one will, in nearly every case, be taken back to some, if not all, of the great strains of blood, these being, in addition to those with which the regular attendant at Peterborough is familiar, the Belvoir, Fitzwilliam (or Milton), Bramham Moor, Grove (Lord Galway's), Lord Fitzhardinge's Grafton, Wynnstay, and Badminton. Other packs that have been broken up, but are frequently to be met with in classical pedigrees, are the Blankney, Burton, Mr. Parry's (Puckeridge), Lord Poltimore's, and the Croome (Lord Coventry's). Lord Portsmouth's and the Brocklesby dog pack have changed hands: so that when one adds the kennels from which hounds are shown almost every year, it is plain that the best blood is widely disseminated. In a good pedigree of a hound, however, as of every animal, judicious in-breeding is almost invariably to be found.

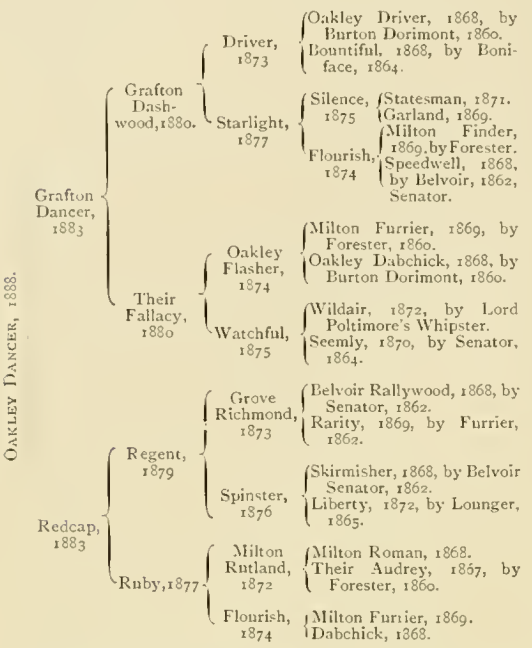
This can be seen in the pedigrees that are subjoined of three stallion hounds, the Belvoir Nominal, Warwickshire Tancred, and Oakley Dancer; the figures attached to the hounds' names denote the year in which they were entered.

The Belvoir Nominal and Gambler have been, perhaps, more sought after by hound-breeders than anything of late years. In nearly every pedigree of well-known hounds the Belvoir Senator's name appears, and he is represented twice in both the sire and dam of Nominal. It will be observed that Nominal is in-bred to the Senator blood on the dam's side, as Needful is his granddam, and also dam of his grandsire: the Milton blood is also to the fore in this pedigree.

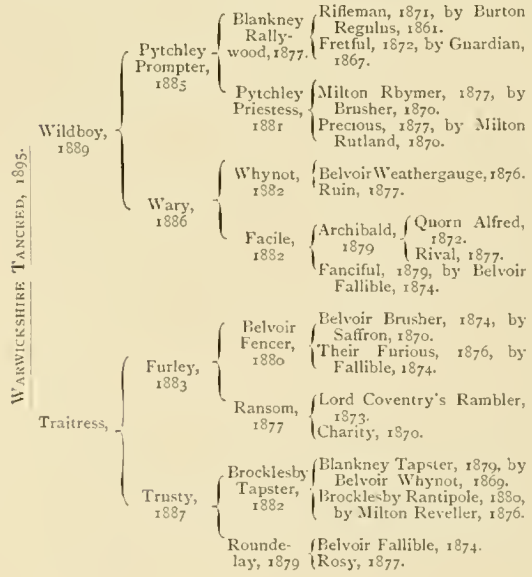


The Oakley Dancer is a beautifully-bred hound; though by a Grafton sire, he goes back on this side to the Oakley Flasher and Driver; the blood of the Oakley Flasher is also to be found on the side of Dancer's dam, Flourish being an own sister. Strains of the Grove,

Milton, Burton (Lord H. Bentinck's), Belvoir, and Lord Poltimore's are also in evidence.



In the pedigree of the Warwickshire Tancred, the blood of the Burton Regulus is especially noticeable. In the Warwickshire entry of 1877 were Rosy, Ransom, Rival, and Ruin, of one litter, by Lord Coventry's Rambler. Rambler was by Lord Fitzhardinge's Collier out of Lord Coventry's Ransom; the latter was by the Burton Regulus out of Petulant, entered in 1865 by Mr. Chaplin, who had in 1864 purchased Lord Henry Bentinck's pack. In the pedigree of Warwickshire Tancred's sire, the Burton blood is also to be traced in the dam of Rifleman (1871), and also in Rallywood's (1877) dam. Burton Regulus was also grandsire of the Milton Rutland, 1872.



Defects in Hounds—Under the present conditions of hound breeding, and with the lists of eighty-six packs in the *Stud Book*, there should be no obstacles to Masters of Hounds breeding back to the best blood. Of the necessity of obtaining good walks for the puppies, and of the annual encounter with the dread distemper, it is superfluous to speak here. As for the offences of muteness, babbling, skirting, &c., no hound guilty of these should be kept in a pack, much less be used for breeding In the mating of hounds that have bad feet, or fail in bone below the knee, the greatest care should be exercised; when once these faults become general in a kennel it is with the greatest difficulty that they are stamped out.

Another fault in hounds which is unfortunately to be met with frequently, is that of being "pig-mouthed," or, as some say, "swine-chopped" or "hog-jawed," *i.e.*, when the lower jaw is shorter than the upper one. Though in some kennels hounds with this defect are freely used for breeding, it should be borne in mind that most judges at puppy shows consider it a grave blemish, if not an absolute disqualification, for honours; thus it is very hard on puppy walkers to send them young hounds so handicapped. The fault is hereditary; and it sometimes comes out in the second generation, even when the sire and dam of the young hound are free from it. As for the fault of being "underhung," when the lower jaw protrudes beyond the upper, it is worse still.

Walking Puppies—If one thinks of the many perils that beset a foxhound's puppies at walk, it seems a marvel that more are not sent back to the kennel from quarters in a crippled state; still, some are sure to be disabled, and it is surely more humane to put them out of their misery than to keep them on in the hopes of their recovering sufficiently to be sent away with the draft. Some young hounds may come in afflicted with the mange, which is apt to give great trouble, maybe in vain. Other casualties to which the young fox-hound is liable need not be further enumerated; suffice it to say that if a hound breeder can, before the commencement of cub-hunting, show 33 per cent. or (if he can afford to be very particular about height, colour, &c.), 25 per cent. of young hounds sent out from kennel the year before, he should by no means consider himself unlucky. Much is to be said on behalf of the plan, which a few Masters have adopted, of having all the young hounds brought in on an appointed day in early spring, and having them judged on the spot, instead of pursuing the usual course of holding the puppy show after they have been some months in kennel. The great point is that the prizes are most likely to go where they have been best deserved, though it is hard on late puppies.

Care of the Bitch—With regard to putting the bitches to the dog in October or November, it may be suggested that a kennel must be very

strong in hounds if the services in the field of good workers can be so early dispensed with; on the other hand, if a bitch valuable for breeding comes early in season, to miss such a chance is surely unwise. It is far better, even at the risk of having to hunt a rather short pack in the spring, to put all the best bitches to, than to be obliged to bring up more whelps than the bitches can manage; few bitches should suckle more than four whelps, and, if their whelping has been severe, it is preferable to let them bring up three whelps, or in some cases even two, properly, than to find, when the time comes to send the puppies out to quarters, that they are weedy and sickly.

The anxieties which devolve upon the huntsman are considerable; the bitches must have liberty both before and after whelping, the numerous risks thus entailed being better than the almost certain disasters which result from shutting them up. Should a bitch slip her puppies, to be on the safe side it is advisable to separate her at once from the other matrons of the kennel. However heavy a bitch may be, her skin should be loose; when it is tight there is trouble in store for her. In short, one shrinks from rehearsing at length all the dangers that attend the rearing of fox-hounds; they are familiar to all kennelmen who know their business, and without such men, breeding hounds is an impossibility.

Welsh Blood—During the last ten years there have been found many advocates for an infusion of the Welsh fox-hound blood into the English kennels. The excellence of the sport which this breed of hounds afford in wild and wooded districts is admitted, and there are many who hold that by crossing the English and Welsh strains the nose and tongue of the former would be improved. As to the value of the cross the opinions of those who have tried it are conflicting; nor is this surprising when one considers the variety of the circumstances under which the experiments must have been made. Though an inspection of the most recent volume of the *Stud Book* shows that the only pack in England into which the Welsh blood has been freely introduced is the Blackmore Vale, it is to be met with in many other kennels not included in the book; and, when a new departure in crossing strains of any breed has been made. it is as well, if possible, to see the result of other people's experiments.

Harriers—In some parts of England there are packs which hunt the fox, but cannot be said to be pure fox-hounds, being crossed with "harriers," though, after the voluminous correspondences that have been carried on as to "What is a harrier?" the word can hardly be written without misgiving; perhaps the breed alluded to may be better defined as that with which the hare was usually hunted before dwarf fox-hounds were generally adopted for the purpose. As for the hare-hound of the present day, from the old Southern hound to the draft from the fashionable pack of fox-hounds, the variety of stamp is so great that the so-called scientific system of breeding is in many cases not feasible. If the action of promoters of the "Harrier" Show at Peterborough, which follows that of the fox-hounds, in directing that the exhibits should be judged purely on fox-hound points has been criticised unfavourably by some old-fashioned hare hunters, it cannot be gainsaid that the emulation which the Show itself provokes is beneficial, so long as working qualities are not lost sight of thereby.

L. J. BATHURST.

HUNTING—FOX, was looked upon by Mr. Beckford as an art, and it may be considered to afford greater pleasure to all the classes of society which are accustomed to participate in it than any other field sport. Dr. Paley has said that he never met with any sportsman who could define or state correctly the principle of sport, but nevertheless the allurements of the chase are stronger now than they have ever been, and attract larger fields of followers every year. It has often been said that a man cannot hunt from a bad motive, and the justice of the observation is generally acknowledged.

Authorities differ with regard to the date in which foxhunting first became an amusement in England, but we may take it that it was not at all generally followed until about the middle of the last century; though the Charlton, afterwards the Goodwood, were in existence in the reign of William III., and the Bridgewater hounds very soon afterwards, besides others. We read, indeed, that King James in the year 1603, was accustomed to hunt as a pastime in the course of the long journeys which were undertaken at that period. The writer tells us that "live hares in baskets being carried to the Heath made excellent sport for his Majesty, Sir John Harington's hounds with good mouths following the game, the King taking great leisure and pleasure in the same." Gervase Markham, writing in the time of James I., praises the chase, and lays it down that "of all the field pleasures wherewith old time and men's invention hath blest the houres of our recreation there is none to excelle the delight of hunting"; but in those days, it must be remembered, the term included the pursuit of fox, hare, or stag. The followers and admirers of the Staintondale hounds, in Yorkshire, claim for this pack that they were formed 200 years ago, and they are trencher-fed. The Sinnington can also boast of considerable antiquity, but these hounds are now kennelled, as are the Bilsdale now (1897) for the first time. Squire Draper commenced operations in 1726, for the purpose of exterminating or reducing the number of foxes in Yorkshire, which had developed lamb-killing propensities. One of

the earliest packs of foxhounds in the western part of England was established by Mr. Thomas Fownes, of Stapleton, in Dorsetshire, about the year 1730, and it appears that these hounds were subsequently sold to Mr. Bowes, of Streatlam, in Yorkshire. The Dukes of Beaufort and Rutland, the Earls of Yarborough and Fitzwilliam, were amongst the earliest owners of celebrated packs, whose reputation has been jealously maintained ever since they were first established. It has been stated that there are 354 packs of hounds in England and Ireland, but Mr. Sargent, who has been at great trouble in compiling an accurate list, allows for "hunts not returned," and estimates the total number at 360. In these days, foxhunting establishments are often conducted on a scale of lavish expenditure which is not only unreasonable, but which deters many promising young country gentlemen from becoming masters, and it is on this account that, at the end of the season, we frequently hear that well-known countries are vacant, and afterwards that the mastership has been offered to and accepted by a stranger, who has no interest beyond the chase in the land over which he hunts. Owners and occupiers of land will preserve foxes more readily for one born and bred in the country than they will for a stranger, however greatly they may appreciate his public spirit in coming forward to take the hounds.

Melton Mowbray may be considered as the metropolis of the foxhunting world, for Leicestershire, rich in glorious grazing grounds, has for a century been looked upon as the premier country; but the agricultural features of the provinces, which were formerly derided and looked down upon as being realms of heavy ploughed land, have undergone a considerable improvement, from a hunting point of view, during the last twelve years. The low price of wheat has effectually hindered the progress of the plough, and the land on which the crop formerly flourished has been laid or fallen down to grass.

Although the wave of agricultural depression which has swept over England and remained with us for so long a period, has had the effect of diminishing the attendance of owners and occupiers of land at the meets, they still give their loyal allegiance to a sport they love to encourage. In many provincial countries the subscriptions, for the same reason, have become seriously reduced.

Although there is no statute book of laws which governs the rights of country, there is an unwritten law in such matters which is perfectly well understood and respected. Thus, every master knows that he may not dig a fox which has found a sanctuary in an earth or drain in a neighbouring country; he may use a terrier, or employ almost any other means which ingenuity can suggest, but the soil must not be broken. It is greatly to the credit of all concerned that foxhunting disputes in regard to rights, limitation of country, or otherwise, so seldom arise; when they do, they are referred to the Master of Foxhounds Committee, which formerly held its sittings at Boodle's Club, but which now meets at Tattersall's once a year to hear appeals and administer justice. Nearly every master is jealous of any encroachment on his country, and huntsmen, who are generally anxious to conform to etiquette, will never allow their hounds to enter a neighbour's covert, unless they can carry and speak to a line into it. The ultimate decision of any vexed question must rest with the landowners and occupiers of land, but in case they are not unanimous it is found necessary to refer the dispute to arbitration, as indicated above. Although an owner of coverts may prevent hounds from drawing them if he chooses to do so, he cannot transfer this privilege to any neighbouring pack, unless with the consent and sanction of the master of the country in which they are situated.

It is difficult to lay down any rule, or, indeed, even to provide an estimate of the expenses which will probably be incurred in hunting a country; these will depend very much upon good management. Circumstances vary, and no two years will be found alike, for the price of oatmeal, oats, beans, hay and straw, is constantly changing, and this variation will often make a considerable difference in the cost. Mr. Delmé Radcliffe, writing in the year 1838, put his expenses for hunting three days a week, or seven days a fortnight, in Herts (exclusive, of course, of his own personal expenses) at £1,885 per annum; and he lays it down that a provincial country, such as Hertfordshire, may be well hunted for the sum of £2,000 per annum. To hunt four days a week it will be necessary to keep fifty couple of hounds, and for two days twenty-five couples will be found a sufficient number. Three days will require as many hounds to be kept as would suffice for four days.

Foxhunting is deserving of support and encouragement, because it not only provides employment for large numbers, but also gives a valuable impetus to our noble breed of horses; while the manly nature of the sport undoubtedly has a marked influence upon our national character. "No higher testimony to its practical utility," says Mr. Delmé Radcliffe, "in a national point of view can be required than that of as brave a hero as ever drew a sword. The gallant Lord Lynedoch, he whom Napoleon characterised as 'that daring old man,' has often affirmed that he should not have been the soldier he is had he not been bred a foxhunter." Colonel Cook remarks that what chiefly contributes to make foxhunting so very far superior to other sports "is the wildness of the animal you hunt, and the difficulty in catching him."

Cubhunting usually commences about the

first week in September, though the date will vary in accordance with the state of harvest and condition of the ground. In plough countries it is better to wait until the great bulk of the corn is carried, but in grass countries and in woodlands there is nothing to hinder the master from beginning as soon as weather permits. It is undertaken for the purpose of blooding and entering the young hounds, and may be regarded as the rehearsal of the more serious business in November. This schooling of the young hounds in the woodlands is a necessary performance, which is very interesting work for the establishment, whose care it will be to get the pack steady before the regular season comes round. The meets are fixed at an early hour, in the first place, because the fewer there are out, the better will the work be performed. Noise of any kind viz. hallooing, cracking of whips, and viewing over the rides is not wanted, and the huntsman's cheer is the only voice which should be heard. Nothing should be allowed to distract the attention of the young hounds from the work on hand into which they are being initiated, and every sportsman should remember this, and repress any inclination to halloo, for in so doing he will support the wishes of the huntsman and assist him in his endeavour to maintain silence. It will be well to select a good scenting covert, where there is known to be a strong litter of cubs, for the first morning; it should be a fair-sized wood, say of 80 or 100 acres, and, if there is no ride in it, so much the better. The hounds should not be allowed to go away, and if, after a good morning's work, a cub or a brace of cubs can be brought to hand, the young entry will go home victorious, and they will not easily forget their first impressions. During the month of September, at least, the scene of operations should be confined to the big woods, and young hounds should never be allowed to run over the open country until they have learned how to use their noses. If this precaution is not rigidly adhered to, and if the young master is not sufficiently strong-minded to resist the temptation of following a fox over a nice line of country, the result will be that the young hounds will be left behind, ridden over, and, moreover, they will pick up all sorts of bad habits, which will cling to them through their career. As the autumn advances, however, and when October comes in, and it is necessary to visit and disturb the litters of cubs in the smaller coverts, the entry will in all probability be handy enough, from the drilling they will have received in the woodland, to justify the master in letting them go.

An occasional gallop in the open after a cub will not only be an enjoyable relaxation after all the hard work endured in covert, but it will also afford an opportunity to the huntsman of seeing how they run together. Great care should be taken to avoid killing in a small covert: if this unfortunately happens, it will not hold again until after Christmas, and, indeed, it is often a moot point whether or not the pet places, which are very small, but yet favourite resorts, should be drawn at all during the cub-hunting season. If a fox should be unluckily killed in one, the chances are there will be no find in it for three or four months afterwards; and yet, if a strong litter of cubs should have made it their head-quarters, it is a pity they should not be roused and taught to fly.

To the master who is fond of hounds, cub-hunting is the most enjoyable part of the season. In the fresh morning air he revels in the glorious crash of melody when hounds run for the first ten minutes, as they only can run at this time of year; he watches the entry with the keenest interest, and sees bewilderment gradually giving place to the dash and drive which are the conspicuous attributes of a fox-hound.

The writer has always preferred a dry cub-hunting season to a wet one, when the coverts are dank and soaked by heavy rain, for in such conditions there is seldom much scent.

Dry seasons are an indication of settled weather, which is usually favourable for scent in covert and outside. It is an unsatisfactory thing to break off cub-hunting for a spell, which huntsmen often think they are compelled to do, when the ground becomes hard from continued drought; it is better to keep steadily on, confining hounds as much as possible to covert, or the entry will forget what they have learned. Colonel Cook, writing in 1826, says that he always considered the cub-hunting season the time when a master of hounds never ought to be absent, whether he hunts them himself or not; and to a real sportsman it is a great pleasure to see his young hounds enter. "At all events," he says, in addressing a young master, "you should never leave your hounds from the first day of cub-hunting until the end of the season. . . . Cub-hunting is very necessary for many reasons; you will gain by it a thorough knowledge of your pack; and they will know you, obey you, and, when you want them, will also carry you through many difficulties they otherwise would not." This is excellent doctrine, which will commend itself to all those who have been privileged to fill the post of master of foxhounds.

The Master—The master of foxhounds should be chosen, if possible, from the residents in the country in which the pack is established, for obvious reasons. Owners and occupiers of land will give their support more readily to one who lives in their midst than to a stranger; and as we know that hunting depends on the sufferance of these great men, and entirely upon their good-will for its maintenance, it is necessary to conform to their wishes. "To hunt a country and make the

most of it, so as to give general satisfaction, requires some consideration. Supposing you have a thorough knowledge of it, use your own judgment and never be led by others, for you will find they most commonly have some selfish motives, and will often mislead you." These words of Colonel Cook will be generally endorsed.

The master should make himself thoroughly acquainted with the country he is taking over, and he should endeavour to obtain accurate information with regard to old customs and hunting rights—where these exist. Perhaps there are coverts which are neutral with another hunt, and in that case great care should be exercised in ascertaining the correct usage of them. For the summer months it will be a congenial task to ride about the country with the hounds at exercise in the morning, and obtain local knowledge. In this way the master will be enabled to make friends with the farmers and keepers, and discover any little details which may be useful when the regular season begins. He will find out where there are litters of cubs, and keep a record of any matter of importance which may strike him during his rides. When the time arrives for sending out the fixtures, these should be made judiciously and without favour or affection. The good and bad parts of the country should be hunted fairly and in their turn, and it will be found that this arrangement will also be the most conducive to sport. If you are continually calling upon the small coverts in the best part of the country, foxes will be difficult to find, and they will lie at earth. The master will keep a diary, which will contain a record of each day's sport, meet, coverts drawn, finds, and any incident likely to prove of interest. In most countries keepers receive a remuneration of 10*s*. for each find, and as they regard this gift as a perquisite, it is very necessary that a strict account should be kept. Colonel Cook dwells upon the advantage which is often taken of a master's good nature by followers of his pack to persuade him to draw some particular covert which may happen to suit their convenience, and recommends him to rely upon his own judgment in such cases.

The master will find plenty of work, in undertaking the management of a four days a week country, to occupy his attention both in the summer and winter months. If he should hunt his own pack, it will be found necessary to appoint a field master, who will maintain the discipline which is essential to success, and who will restrain the unruly spirits, a few of whom are to be found in every hunt, from spoiling their own sport and that of others by heading foxes and pressing upon hounds in their work. He will do his best to prevent injury to the farmers, and in this endeavour he will be loyally assisted by all true sportsmen.

The Huntsman—There is no better class of servant to be found in England than the huntsman to a pack of foxhounds; and the explanation of this assertion, with which it is not improbable that we shall most of us agree, is not very difficult to find. He has undoubtedly been selected for the post because he possesses qualities which would adorn the character of a man in almost any station of life. He should be well-conducted, sober, of strict integrity and even temper, and it is needless to say a good rider to hounds; moreover, as he is placed in a position of responsibility and trust, and is often obliged to act upon emergencies and to take upon himself to decide matters the consideration of which would more properly devolve upon his master, were he present, he should be possessed of intelligence and sagacity above the common order of mankind. Beckford, in describing the characteristics of an ideal huntsman, says: "he should have an eye so quick as to perceive which of his hounds carries the scent when all are running, and should have so excellent an ear as to always be able to distinguish the foremost hounds when he does not see them; he should be quiet, patient, and without conceit." It may be added to this description of essential qualifications, that he should be impervious to criticism, doing his duty and handling his hounds in the way which seems best to himself and his master, to whom alone he is responsible. The writer lays stress upon the fact that he must be impervious to criticism, because the veriest tiro who comes out hunting thinks himself capable of passing judgment on a cast.

In the words of Mr. Jorrocks, "a fish-fag's ware isn't more perishable than a huntsman's fame; his skill is within the judgment of every one—cleverest fellow alive—biggest fool going." And again, "a huntsman's fame rises and falls with the sport he shows." Tom Smith, a late master of the Craven Hounds, thus hits off the character of an ideal huntsman: "To be perfect a huntsman should possess the following qualifications: health, memory, decision, temper and patience, voice and sight, courage and spirits, perseverance, activity, and with these he will soon make a bad pack a good one. If quick, he will make a slow pack quick; if slow, he will make a quick pack slow."

All this is very sensible doctrine which must commend itself to every one, and, if a master can obtain the services of one who has all these gifts of excellence, he is a fortunate man. To my mind the conclusion of the whole matter, and the keynote of success in the field, is well summed up by Beckford thus: "he should let his hounds alone whilst they can hunt, and he should have genius to assist them when they cannot." The management of the kennel is perhaps the most important duty the huntsman has to perform; for if hounds are

not brought out thoroughly fit to go, in good condition and steady, the chances of sport and a successful season are indeed reduced to a minimum. To keep hounds healthy, it is necessary that they should have the best food of its kind which it is possible to procure, and authorities agree that oatmeal of good quality is not only the best food for a foxhound, but also the most suitable for sustaining him in the long days and hard work he has to perform in all sorts of weathers and in all sorts of countries. Barley meal is heating, and meat or fish biscuits, in the opinion of experts, are generally considered unwholesome, for no one can say what they are composed of. When biscuits are used for a change in the summer season, ship biscuits are decidedly the best and most wholesome. Exercise, and plenty of it, is essential to the good health of a pack of hounds, and there is no greater mistake than to allow hounds in the summer to put on too much flesh.

Of the huntsman's duties in the field a more categorical description will be given later, and it will only be necessary at this point to state that in choosing a huntsman it will be well to ascertain if he has been brought up in a good school, and if he has been learning his business under a capable mentor. He should be a reliable servant who is willing to allow his hounds to do their share of the work without obtruding himself upon every opportunity. Nothing can be more distressing to a sportsman than to find himself associated with a huntsman who is always interfering with his hounds, who rides in front instead of behind them, and who, in short, wants to do all the work himself. Such an one will soon ruin any hounds, and convert them into a slack, disheartened, and unenterprising pack. "It is always great impertinence of a huntsman," says Beckford, "to pretend to make a cast himself before the hounds have made theirs." There is a depth of wisdom in this doctrine, which all sportsmen will at once acknowledge; and this good piece of advice is worthy of being printed, framed, and hung up in every boiling house. The writer's first impressions of a huntsman were derived from observation of the methods and practice of two remarkable men in their line, who inspired the veneration conceived by youth for those who have distinguished themselves in the world of sport. Jem Hills and Harry Ayris, then in their prime, carried the horn in the Heythrop and Berkeley countries, and each one of these well-known men had acquired a reputation for showing sport, handling hounds and accounting for a fox, which was not confined alone to the country in which his operations were conducted. Jem Hills was huntsman of the Heythrop hounds, but he was a native of Surrey, and came of a family well known in the foxhunting world, since it has turned out many capable huntsmen in days gone by. He was above the middle height, with a fine intelligent countenance and pleasant manner, and he possessed a fund of anecdotes which made him a favourite with all the country side; more especially was he beloved by the Oxford undergraduates, to many of whom he supplied lessons, inculcated by the observation of his practice in the field, which have never been forgotten. He was a good man to hounds in his particular way, going through rather than over a country, but he had a great aversion to jumping water, which often caused him to make some divergence from the line, though he always turned up as if by magic when it was supposed by the thrusters that they had left him far behind. His knowledge of the country and the run of the foxes stood him in good stead, and enabled him to take liberties with his hounds by lifting them in a failing scent. The art of doing this successfully seemed peculiar to him, though the writer has often seen others attempt to carry out the system, but nearly always with unsatisfactory results. When the fox appeared to have run us out of scent altogether, when there was no friendly holloa to guide and no beacon to steer for, and when it really seemed that there was nothing for it but to go home in the dumps, old Jem would catch hold of his hounds with his cheery "here-a-way, here-a-way," gallop off for a mile or so, when he would suddenly stop. "Yere-lert," down would go their noses; as if by magic they would hit the line, with a thrill of delight at the pleasure of once more getting on terms. Jem had the rare gift of being able to do all this without exciting hounds or getting their heads up. On the contrary, when he stopped, they would drop their noses at once, and settle to the line as if nothing out of the ordinary course had happened. But then it must be borne in mind that he always went with his hounds; he didn't gallop, screeching or blowing his horn half a field a-head, with the whippers-in rating and putting them on to him, but he kept his head, and so the hounds kept theirs.

Harry Ayris, who was huntsman to Lord Fitzhardinge, was an excellent servant, a capital rider, and one who was always ready to seize upon any advantage during the chase. Both of these celebrities hunted in a partly stone wall country, which certainly gives a huntsman a splendid opportunity of estimating the value of his hounds. In the first place he has an uninterrupted view of their work; whilst the chance of detecting skirters, mute hounds, babblers, unsteady ones given to riot, and those which cannot run up, becomes a certainty in the open country. Some of the faults enumerated in the above list may, and very often will, escape notice in a woodland country for a considerable time.

Let us follow a huntsman who knows his business into the field on a hunting morning. Let us suppose that he has received orders to

draw first a wood of some sixty or eighty acres with a thick undergrowth of blackthorn. He will first consider from which quarter he may best approach this covert so as to give his hounds the wind. When he is about a hundred yards off, he will give his hounds a signal, and they will spread out like a fan, seeking meuses through the wood hedge; he will then himself proceed down the nearest ride, encouraging his hounds to draw with his voice. He will do this in leisurely fashion, taking care to keep behind rather than in front of his hounds whilst they are drawing. If he were to hurry them at all now, they would certainly slip out into the rides, for a foxhound dislikes nothing so much as to be left behind; and if the huntsman has not the full confidence of his hounds, they will become uneasy and shirk their work in covert. Some huntsmen will occasionally touch the horn whilst drawing, with the view, I suppose, of rousing the fox; but I cannot think this at all a necessary practice, for in my opinion the horn should be used as little as possible, and then only on occasions when it is really needed. But hark! old "*Traveller*" challenges. "*Have at him, Traveller!*" Every hound strains his very best to reach the veteran: the fox is unkennelled —we know that a fox well found is half killed—the glorious crash of music which follows fills the huntsman with ecstatic delight: he keeps as near to his hounds as the rides will permit, whilst they force the fox through the cover in such a determined fashion as will make him "fly or die." They are nearing the outside fence, in another second they pour over it like a cataract, and forcing his horse through a blind gap, our huntsman is behind them in the twinkling of an eye. A peculiar note of his horn, well known to "Dick" and "Joe," one screech, and, sitting down in his saddle, he runs his eye over the pack and gets a count. They are all there; and with a mind at ease he has time to look about him, and speculate on the probable point for which the fox is making. Hounds are meanwhile running over old pasture land, carrying a great head in the mute ecstasy of pace, and the huntsman riding behind them —a place of distinction which the master and he alone of all the field are privileged to hold. After twenty minutes, hounds check for the first time; and the huntsman, pulling up short, sits motionless like a statue, following them with rapt attention as they swing round and make their own cast, as it turns out unsuccessfully. Then, having done all they could without avail, they come back cheerfully to the huntsman to seek his aid. The cause of the trouble is easily perceived. Hounds have been revelling in the glorious scent peculiar to old grazing grounds, and they have now to work their way over the arable in the shape of a field of roots recently fed off by sheep. Naturally enough they cannot understand the difference in the scent, and they are disinclined to trouble themselves to work it out. The huntsman quietly holds them over the field, encouraging them to try; an old hound drops his nose; he shows a line; his companions follow his lead, soon they understand and settle to changed conditions, and, though they cannot trust themselves to race, they gradually surmount the difficulty, clustering like bees round old "*Traveller*," with their noses glued to the ground. Soon they come to grass again, and heads up and sterns down is once more the order of the day. A big woodland appears in view, and this is the point for which the fox has been making. He has entered it; but, to the intense joy of the huntsman, soon slips out into a ride, for, distressed as he is, he cannot make headway through the thick blackthorn covert. So the fox runs the rides, which is a certain indication that he has had enough, and the only fear is that a fresh one, disturbed from his kennel, should cross the line. There is but little chance of such a catastrophe, for there is no cry except a whimper or so as the leading hound snatches for the scent at the corners, and the huntsman knows better than to make any noise himself. By many signs he is well aware that the fox is close in front: the jays are blackguarding him, and show the way he goes. Now he slips out of cover and runs up the hedge side. Hounds catch a view, and straining their hardest, bowl him over with a snap and a worry. Fifty minutes, and every hound up. *Finis coronat opus.*

Whipper-in—The first whipper-in should be a light-weight, must be a good horseman, and, if he is to be a success, must make up his mind from the beginning to support the huntsman constantly and loyally. He must stop hounds and turn them to the huntsman's horn, even when he feels convinced they are right. In short, he must never attempt to take a leading part unless exceptional circumstances—such as an accident to the huntsman—should arise. Too much value should not be attached to the viewing of foxes in the early part of the chase; on the contrary, the whipper-in should rather be in attendance on the huntsman, ready to assist him as occasion requires; but when a fox has been on foot for forty minutes, and is beginning to run short, then is the time for the whipper-in to exercise his genius by getting forward for a view, stopping the fox from running his foil in cover and taking care that no fresh fox should allure hounds from the line. He should count his hounds upon every opportunity. The second whipper-in must also be a light-weight, and it is his duty to bring on any tail hounds, and to stop such as may have divided from the pack. He also should count hounds on every opportunity. In going to covert, the place of the first whipper-in is in front of the hounds, and that of the second some distance behind the huntsman; and he should take care to

give hounds plenty of room to pick their way through muddy lanes and bridle-roads. When hounds are running riot, the whipper-in should get to the head of hounds before rating or attempting to stop them. Then the stinging lash should be applied to the ringleader, and he should be rated by name. In the case of hardened offenders, they may be taken up and flogged; but if it is found necessary to inflict this punishment, it should be done at the time, and not, as is sometimes the case, on the return of the hounds to the pack after a considerable interval of time has elapsed.

After all, hounds can only be made steady by constantly exercising them amidst din and riot of all kinds, and by judicious handling on the part of the huntsman. In windy weather hounds are often wild, and Vyner tells a story of a pack which one day broke away and commenced running the crows, which often skim along close to the ground in windy weather; and the old kennelman gave it as his opinion that they never would have been stopped at all if, "by the blessing of God, they had not changed to a jackass." Beckford thus recapitulates the qualifications of a whipper-in: "If your whipper-in be bold and active, be a good and careful horseman, have a good ear and a clear voice—if, as I said, he be a very Mungo, here, there and everywhere, having at the same time judgment to distinguish where he can be of most use; if joined to these, he be above the foolish conceit of killing a fox without the huntsman, but, on the contrary be disposed to assist him all he can, he then is a perfect whipper-in."

The necessity of counting hounds whenever it is possible to do so, has been insisted on, and as an illustration of the value of the practice, the following anecdote may be related. The writer, when he hunted the Croome country, found a fox in a large covert called Tiddesley Wood and hounds were not long in getting away. As they left I was able to count the pack, and discovered we were short of a hound. After a capital run the fox was killed the other side of Spatchley in the Worcestershire country and, on running them over, it appeared they still wanted a hound, and that hound was "Rambler." "Rambler" was never away before, and the writer, remembering that a hound was lost when they left Tiddesley Wood, told Fred, the second whipper-in, to ride back to that covert, many miles off, and see if he could hear anything of him. Fred accordingly rode through the boggy rides in the wood calling the hound's name and just as he was coming out in despair and giving it up as a bad job he heard a whimper. So getting off his horse and fighting his way through the blackthorn, he found poor old "Rambler" fast in a wire, set no doubt by some poacher for a fox, since it was almost strong enough to hold a man. If the master had not been able to count the hounds away from Tiddesley old "Rambler" would undoubtedly have perished miserably.

The Earth Stopper—In old times the "earth stopper" used to be part and parcel of a hunting establishment, and, mounted on a rough pony, with a spade over his shoulder, and carrying a lantern, it was his duty to proceed to the earths situated in the country which was to be drawn the following day, and carefully to stop them with earth or faggots about the hour of midnight. The fox, who feeds at night, upon returning at dawn, finds the access to his quarters barred, and so makes a kennel for himself in some snug place in the neighbouring covert. Now, however, it is generally left to the gamekeepers to undertake this duty in their respective beats, and it is questionable if they all of them perform this part of their work conscientiously and at the proper hour of night; many will content themselves by "putting to" the earths in the morning; but, where a country is frequently disturbed, foxes are shy and repair to their earths to lie with the first dawn of day, and so a blank draw is often the consequence of a piece of laziness on the part of the keeper. At the end of the season it is customary for the master to give an "earth stoppers'" feast, which is much looked forward to by those who are entitled to an invitation, and are accustomed to draw the pay which they are to receive. At this entertainment the tables are usually presided over by the huntsman, and a jolly evening is spent. These gatherings do much to encourage goodwill and promote the popularity of fox-hunting.

Kennels—All who have studied the questions involved in selecting the site of kennels, and who may therefore be regarded as authorities, agree that their position should be high and dry,—

> Its courts, wide opening to receive
> The sun's all-cheering beams when mild he shines
> And gilds the mountain tops,
> Upon some little eminence erect,
> And fronting to the ruddy dawn.

And when we reflect that our sport depends in so great a measure upon the health and condition of the hounds, it is not surprising that the construction and convenience of kennels is considered as a matter of the very first importance. The most essential qualification of a kennel is that it should be dry; for, if it is damp or insufficiently drained, or cold, you will always have lame hounds. Beckford's observations upon these points are so excellent that they should be followed in every particular; and, while he recommends economy, and condemns in sensible language the useless extravagance one sometimes finds in the architecture or building of kennels, he strongly advises that they should be of sufficient dimensions in the first place, for the simple reason that it is always difficult to make altera-

tions when once the building has been completed.[1]

The floors of the lodging-rooms should be bricked and sloped on both sides, so as to carry off the water from the centre, and the yards which are attached to the lodging-rooms should be similarly constructed. The posts of the doors through which the hounds pass should always be rounded, otherwise these will be constantly causing injury to their stifles. The sleeping benches should be made of deal, and these should be open—that is, there should be a space of at least an inch between them, for reasons which are obvious—whilst they should be attached to the wall of the lodging-room by hinges, so that they may be folded up when the kennel is cleaned out. The benches should be low, in order that hounds may be prevented from creeping underneath, and also to enable them to jump upon them easily when they have come in tired from a long day's hunting. In some kennels the walls are heated by flues, and though this may be desirable enough in low and damp situations, it is hardly necessary when the building is on sound and high ground and not overshadowed by trees. Warm lodging, however, is absolutely indispensable for the comfort and well-doing of the pack, and must be secured at any cost, and, where dampness is found to exist the floor should be taken up and a layer of ashes and finely-broken stones put underneath. But, even with all these precautions, there will be occasional cases of rheumatic lameness in most kennels. Kennel lameness is, indeed, a dreadful calamity, which causes more uneasiness in the minds of huntsmen than any other affliction, because it is the most difficult to treat successfully. The only cure, as far as my experience goes, is to be found in a change of quarters. When a hound belonging to the writer was struck down with this scourge he was accustomed to send him to the kennels of a good friend who lived at some distance off, and he was invariably sent back sound in the course of a few weeks. Still, hounds which have once been troubled with it are, as a rule, always liable to a return of the malady, and are never to be depended upon. An old friend of mine, who was a master of foxhounds of considerable standing, used to say laughingly that in his belief the real origin of kennel lameness proceeded from bad shoulders, and it is certainly true that the disease is more frequently to be found in hounds with this defect than with those of perfect conformation.

An Old-time Earth Stopper.

The boiling-house is usually placed at the back of the building, with well-seasoned elm boards fastened to the wall to receive the

[1] It is said that the construction of the kennels at Goodwood cost £19,000.

pudding when it is taken out of the boiler. There should be two boilers made of cast iron, one for cooking flesh and the other for meal. The water-tanks in the yard should be made of slate, which is more readily kept clean than iron or wooden troughs, and care should be taken to enforce the regular cleaning and filling of them. It is unnecessary to add that there should always be an unfailing supply of pure water, since a very large quantity of this fluid is required for washing down the courts and dormitories. Nothing can equal good old Irish or Scotch oatmeal as food for foxhounds, and it is better always to have at least six months' supply in hand, for not only does it improve with age, but it also goes further by keeping. Great care should be taken to secure good meal, for in this, as in other food, there is often a considerable amount of adulteration. The flesh-house should be at some distance, since the smell which proceeds from it is neither pleasant nor conducive to health. To every kennel there should be attached a large walled-in yard, some three or four acres in extent, in which the young hounds just brought in from quarters should be allowed to exercise themselves during the greater part of the day. The number of hounds to be kept will regulate the size of the kennel, which need not be a very expensive structure.

Distemper is a disease which almost invariably attacks young hounds on coming into kennel, and which carries off a large proportion of the sufferers. It often appears in a variety of forms, which are all difficult to treat; but, when the yellows, or jaundice, accompanies distemper, the combination in ninety-nine cases out of a hundred proves fatal.

Distemper, for the most part, affects hounds in the same way as the visitation of influenza in human beings; for it generally attacks the head and is accompanied by a virulent discharge from the eyes and nostrils. The disease is felt in the brain and back, and it often happens that, when young hounds appear to have recovered, a twitching of the limbs remains behind; and when they are afflicted in this way, it is better to knock them on the head at once, for they will never prove capable of service in the field. When hounds come in from quarters where they have been well done and are full of flesh, the disease will generally attack the lungs and liver, and calomel is the best remedy which can be employed. Every huntsman has a nostrum of his own, which he thinks a specific cure for the malady; but, in spite of all this knowledge, the disease carries off large numbers of young hounds every year, and, of course, the weather has great influence in retarding the cure if it be wet or cold. Warm and dry quarters, with generous living, when the virulence of the disease is passing away, are the best remedies which can be employed. Some use Turkish baths, and this treatment is discussed in the paragraph which deals with jaundice.

Yellows, a disease corresponding with jaundice in the human frame, is often produced by excessively good feeding, and, at the same time, insufficient exercise. The sufferer must be kept in a warm place: but the complaint is very seldom successfully treated, and never when it is allied with distemper. A friend of the writer attached great value to the curative properties of the Turkish bath in cases of yellows; and he was accustomed to put his sick hounds in the bath, at the same time giving them as much water as they would lap, which he declared expelled the bile from the system; but, as I have never seen this treatment employed, I cannot speak of it with the confidence engendered by personal experience of the application of the remedy.

The Rounding of young hounds, which should not be performed till they are well over the distemper, is a painful operation, but one which it is supposed will save hounds from suffering from the wounds and laceration inflicted by drawing strong blackthorn coverts, if the ears are allowed to retain their long tips. A butcher's block with a smooth surface must be obtained, and upon this the ear is stretched, then a half-moon iron, laid on the tip, is struck with a mallet, and the operation is completed. A little oil will soon heal the sores, and in a very few days hounds will be able to go out. In several kennels the operation of rounding has been abolished.

Great stress should be laid upon the order that rounding should not be performed until young hounds are over distemper and have quite recovered their strength and spirits, for, if they are at all lower in condition, the loss of blood consequent upon the operation will pull them back and perhaps cause them to miss a part of the early education of cub hunting.

Drafts of old and and young hounds are made annually from every kennel, and the reasons for which the old ones are drafted are unsoundness in limb or constitution; for being rogues, that is wide runners, or skirters; for running mute; or for being noisy, that is babbling or speaking where no fox has been; for throwing their tongue when going to cry, or hanging on the line: because all of these vicious propensities would be likely to contaminate by their evil example the rest of the pack; then young hounds are got rid of because they are not "sorty," that is that they will not match the others in size or colour, or because they do not appear to have robust constitutions. Drafts were formerly considered to be the perquisite of the huntsman, but of late years gentlemen have found it desirable to take the management in this direction entirely in their own hands. The price for the old and young draft is usually fixed at three guineas a couple; but for the second draft of young hounds, which is often

not made until just before the season for cub-hunting commences, five guineas a couple is not uncommonly demanded.

Coverts—The biggest woods will always hold the best foxes; big woods are the real preserves for good foxes; those found in gorse and stick coverts are often short runners. Foxes prefer natural coverts, which lie high; if these are warm and thick at the bottom, with plenty of shelter from the different quarters of the wind, they will seldom be drawn blank. The large woods and blackthorn brakes will prove a favourite resort, and, if the foxes are let alone, will always hold. We must, however, occasionally make artifical coverts; but these, like artificial earths are seldom satisfactory, and if great care is not taken to make the latter in a dry situation, it is not at all improbable that they will be the means of introducing mange into the country. However, it is often desirable to plant coverts in certain portions of a country where none exist, and also to establish a connecting link between woodlands and the more open portions of the country. The subject of making these coverts must be carefully considered, and only those planted which are likely to flourish, and suit the soil in which they are found. Thus in a strong, heavy, clay district gorse will never really succeed; and it will be much better to plant blackthorn, than which nothing in this description of land is more likely to grow kindly. Moreover, it is no joke to attempt to force your way through a strong blackthorn covert; and for this reason alone it may be cultivated, for it will be more likely to lie quiet. After all, the great secret of attraction to foxes is complete tranquillity. But in certain countries gorse is indigenous to the soil, and then there can be no better covert. If it is decided to plant a gorse, a piece of sound ground should be chosen and drained if necessary, and the land should be summer fallowed, well cleaned and manured as if for swedes. About three pounds of seed to the acre should be drilled in the month of April, and this should be treated in every respect the same as a crop of swedes, and well hoed until the gorse has out-grown the weeds. Rabbits are very fond of gorse, and they must be kept down in the earlier stages of its growth. Every fifth year a patch of the gorse, which by this time will probably have become hollow and weak, should be cut or burnt, and perhaps the latter plan is the better of the two. Privet, rhododendrons and laurels are sometimes planted, but they can never make such satisfactory covers as gorse or blackthorn, but the writer has known Jerusalem artichokes a certain find. Osier beds are a favourite resort for foxes, partly because they are grown on land which has been thrown up, and which is, in consequence of this treatment, high and dry, and partly because they are usually grown near brooks or rivers, where the water-rats are a great attraction. The writer recollects a small covert belonging to a staunch sportsman, which was drawn by hounds on an average once every three weeks during the season. It was not more than three or four acres in extent, and yet it never failed to produce a fox, and even if one was killed from it after a run, another one took his place and was always forthcoming when the hounds came. Some supposed that the old sportsman had some method of attracting the foxes, and the neighbours used to say that he was accustomed to trail a rat as a drag from several points to the copse, in which he always took care there should be a plentiful supply of dead rats. When you want to make some coverts which will hold at once, stick covers and faggot covers are often found to produce the desired result. A quantity of long ash poles should be felled, and should rest upon some forks stuck firmly in the ground, about two feet high. These should be roofed as it were with the loppings of young fir-trees, and hedge trimmings thrown all over, and if these small places, which need not be more than a couple of acres in extent, are securely fenced round and in quiet, foxes will soon lie in them; or you can fence a certain quantity of land and set up ordinary faggots not very far apart, and in the course of a summer's growth brambles, thorns, and long grass will twine themselves over the interstices, and make an impenetrable covert.

Scent—That no uncertainty in the world is greater than that of scent is the conclusion I have arrived at after close observation extending over more than forty years; and I should be sorry to take upon myself to lay down any rule with regard to it, knowing, as I do, that it has always been a puzzle to the best recognised authorities in many generations. Mr. Jorrocks remarks that scent is a "weary, incomprehensible, incontrollable phenomenon, constant only in its inconstancy;" and he adds that "nothing is so queer as scent except a woman." Somervile believed scent to depend upon the air alone.

> "Then on the air
> Depend the hunter's hopes."

But in this conjecture we know he was wrong, since we are all aware that some varieties of soil carry scent better than others; that when the land picks up, as it will do when a white frost yields to the influence of the sun, hounds can scarcely carry on the line over the sticky fallows; and, when the leaf falls in October, we know there will be no scent in cover until it is rotted by the heavy rains of November. These reasons are sufficient, in my opinion, to dispel the accuracy of Somervile's theory that scent is in the air only. Beckford says that scent depends chiefly on two things, "the condition the ground is in, and the temperature of the air;" and I am inclined to think a better definition

cannot be found, and that when this happy combination occurs the prospects of sport are almost reduced to a certainty. "Scrutator" believed that there were two kinds of scent, one proceeding or exuding from the body and breath of the animal when in motion, and the other that left by the foot or pad. There are certain mystical signs or symbols indicative of the probabilities of a good scent or otherwise which must not be despised. Thus when hounds roll upon the grass, when they eat grass going to the meet, when they lash their sterns in drawing so as to stain them with blood, when gossamer floats, and cobwebs lie on the grass, when hurtling storms sweep over, and when the barometer falls and rainbows are seen in the sky,[1] —all these may be taken as indications of a bad scent; yet, as no one can possibly affirm it will be so, a sportsman will never give way to despair nor relax his efforts to show sport even in such untoward circumstances. Most huntsmen have their own ideas on the prospects of the day. Jem Hills could never "abear them nasty blue mists;" Harry Ayris held "a cold wind from the south" in equal abhorrence; whilst of Will Todd it is said that he was accustomed to remark on a propitious morning, "He must fly or die to-day, gentlemen."

When hounds exhibit unusual keenness on their road to the meet, when they smell strong coming out of kennel, when paving-stones sweat, when the barometer rises, when the atmosphere is so clear that you can almost count the thorns upon the hedges,—all these are favourable signs which are often found to denote a scent. Wind is always regarded as being most antagonistic to sport, and Beckford says, "Never take out your hounds on a windy day." There are, however, exceptions to every rule, and I can well remember a capital run in very windy weather. In February, 1867, the North Cotswold Hounds, of which the writer was then master, met at the Fish Inn. It blew a gale when we started, which increased in force until it was a regular hurricane when we left the meet. We drew Armley Bank, and it was dangerous work to ride in covert, for the wind snapped off some of the larch trees half way up, and they were falling about in all directions. We found a fox, however, and killed him after a good run at Stanway, a capital point, and it is worthy of remark that the fox *ran up-wind all the way*. In heathy countries in certain conditions there is a good scent; on a large tract of common land, known as Defford Common, in the Croome country, hounds will run hard even if a fox is half an hour or more ahead of them, because the fox brushes against the ant-hills, &c., with which it is covered. When hounds, getting well away with their fox, drive him up the wind at a rattling pace for fifteen or twenty minutes, if he turns down the wind, as he is almost certain to do, he is not unfrequently lost, for the reason that the hounds, all aglow with dash and fire after revelling in a burning scent, are most unwilling to stoop and hunt a colder line. It is at this critical juncture that the science and skill of a clever huntsman are called forth. Sitting like a statue on his horse, and motioning the field to do the same, he will encourage his hounds to drop their noses; he knows full well that any movement of his may upset their mercurial temperament and make them still more unwilling to descend to the drudgery of working out the line after the splendid fling in which they have been indulged; and his patience is indeed well and amply rewarded when old "Prudence," pushing her way through the pack, which with heads up are standing around uncertain and unsettled after the excitement of the burst, shows the line at a canter down the furrow, and, with a note sweeter to the ear of the huntsman than the most entrancing music, rings the knell of the doomed fox. Getting together and clustering round her, hounds settle like bees upon the line, which they will now never leave until the varmint is accounted for. When a fox runs the road it is often a long time before hounds will drop their noses and work out the line; but in every pack there is always one old road-hunter to be depended on, which comes to the rescue on these occasions, and when once he shows the way others take up the line with a determination and at a pace which leads one to wonder why on earth there ever should have been the slightest difficulty in hitting it off at once. A huntsman cannot give hounds too much time in reason upon a road, and he must be careful also to give them plenty of room and see that his followers do the same. When a frost is in the air and coming on at night hounds will almost always run with a burning scent.

When sheep cross the line of the fox during chase, a check invariably ensues, but no description of stock foils the scent so badly as colts. On these occasions the judgment and patience of the huntsman are called into requisition, and the services of a line hunter to guide the pack through their temporary difficulties are of inestimable value; for, when hounds have been running hard and are settled to the line it is a great mistake, in my opinion, to take them off their noses and rely upon lifting, unless there is no help for such a proceeding. In these circumstances patience is needed and a huntsman who knows his hounds will make them hunt the line, however indisposed they may have been in the first instance to work it out. In making a cast a huntsman should always have at least three-fourths of the pack in front of his horse.

Hounds—A hundred and fifty years ago there were two tribes of hounds, namely, the Southern and Northern. The former variety was chiefly used by those who were accustomed

[1] "When the dew hangs on the thorn,
The huntsman may put up his horn."

to follow the chase on foot; but the Northern breed possessed pace, and dash, and drive, so that their pursuers were obliged to ride to keep up with them. Gradually, however, these distinctive breeds disappeared, and, early in the present century, it would seem that a fixed type of merit was settled, and speed, beauty, stoutness, and nose became the ruling characteristics of the more modern breed. A foxhound should be 23½ inches high; his legs should be straight, his bone well carried down, his feet round, his neck clean, his shoulders well placed, and sufficiently strong and deep; his back broad, his stern not coarse, but set on so that he carries it well; his thighs muscular, his head rather large than small, and his conformation symmetrical throughout. When hounds stand over at the knee and are out of elbows, their shoulders will not always bear a strict scrutiny, and when they are light below the knee, and back at the knees, it sometimes happens that they are flat-sided, and generally wanting in muscle.

To form and establish a pack of hounds is a serious consideration indeed, and one who achieves success in an undertaking of the kind must be possessed of knowledge, energy, and judgment. A young master will do well if he can see his way to buy a pack which has been together for some years, otherwise the task of formation must be accomplished by purchasing drafts from the best kennels. Having these he will be unlucky if he cannot add supplementary assistance in the shape of some few couple of reliable working hounds, which he may have been able to beg or buy in the course of the summer. It will be advisable to put on a strong lot of young hounds in the first season, and with care and attention, in three or four years' time he should be able to get together a respectable pack of hounds. In breeding, the best kennels should be resorted to, and the best stallion hounds used. If good walks are plentiful, advantage should be taken of this piece of good fortune to breed as largely as possible, which is the certain road to obtain a good pack. The bitches should litter in the spring; that is to say, in the months of February, March, and April. Late puppies seldom thrive. The pedigrees will of course be strictly kept, and the puppies should be named before they are sent out to walk, and also branded on the side with a letter, denoting the name of the owner or country.

A great many sportsmen are prejudiced in regard to the colour of their hounds, and the Belvoir tan is generally admired and preferred to any other. No doubt uniformity in this respect makes the pack much more sorty, and adds to the beauty of their appearance. No sensible breeder will, however, use a stallion hound only because he excels in beauty of colour and conformation, and he will, in the first place, require to know from some trustworthy source whether the hound bears a good character in his work before he decides to avail himself of his services. It is the dash and high courage of a foxhound which is his chief distinguishing merit, and, if his eagerness should lead him to overrun the line with a twisting fox, yet this impetuosity is atoned for by the brilliant way in which he will do his work when scent serves.

The speed of hounds appears to have been a matter which excited great interest among sportsmen of the past, and we read that Mr. Meynell and Mr. Smith-Barry made a match for 500 guineas to run each a couple of hounds over the Beacon Course at Newmarket—4 miles 1 furlong and 177 yards. Mr. Barry's hounds were Bluecap, four years, and Wanton, three years; and Will Crane commenced training them on August 1st, teaching them to run keenly on a drag, and feeding them on oatmeal and milk and sheep's trotters. It is stated that Mr. Meynell's hounds were fed during the time of training with legs of mutton. The match was run on September 30th, 1762, and the drag from the Rubbing House on the Old Cambridgeshire Course, Newmarket Town End, to the Rubbing House at the starting post of the Beacon Course. The hounds were laid on the scent, and accomplished the distance in a few seconds more than eight minutes. Mr. Barry's Bluecap came in first, his Wanton (very close to Bluecap) second. Mr. Meynell's Richmond was beaten by 100 yards, and his bitch, the second string, never came in at all. The betting was seven to four on Mr. Meynell's hounds. Threescore horses started with the hounds, but of these twelve only were up at the finish, and the mare which carried Cooper, Mr. Barry's huntsman, who was first up, became quite blind. Merlin, a bitch bred by Col. Thornhill, was very speedy, and it is recorded of her that she ran a trial of four miles in seven minutes and half a second. This bitch, we read, was eventually sold for four hogsheads of claret, and the seller to have two couples of her whelps. The horses appear to have cut a poor figure in the trial over the Beacon Course, and this probably led to the frequent discussions which took place with regard to the relative speed of hounds and horses.

About thirty-five years ago, if the writer's memory is correct, a match was made between the Duke of Beaufort and Lord Glasgow, in which the former undertook to run his hounds against horses named by the latter over the Beacon Course at Newmarket. The match gave rise to a good deal of speculation at the time, and each side had its champions, but for some reason or other it was abandoned. The general opinion at the time was in favour of the horses, and considerable odds were betted that they would prove victorious.

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Fox Hunting

Hound shows, which were held at Yarm, York, Cheltenham, and other places, have finally found a resting place at Peterborough, where they are annually held in the month of July.

The advantages of comparison are generally acknowledged, and without doubt these shows have done much to improve the breed and awake fresh interest in the noble science. No one would think of sending a crooked hound for exhibition; and masters and huntsmen from north and south and friends of the chase, make a point of being present; for the meeting at Peterborough is a sort of hunting parliament where changes are discussed and views ascertained and given on intricate cases, where any difference of opinion exists.

Mr. Vyner, writing in 1841 in *Notitia Venatica*, foreshadowed the good work of hound shows, and remarked that nothing would be more likely to improve the breed of foxhounds. He pointed out that the awarding of prizes to the best breeders and feeders of cattle had been attended with the most beneficial results, and could see no reason why improvement in the breed of the foxhound should not be promoted by the same means; and he further observed that, a few years before, three celebrated masters of hounds—Mr. Hodgson, Mr. Wickstead, and Mr. Foljambe—made a practice of showing a few couples of their new entry for a prize, which was most appropriate—namely, a piece of scarlet cloth to be made up into hunting-coats.

COVENTRY.

[*See also* DOGS and HOUND BREEDING.]

DRAG—Lowest, perhaps, in the scale of hunting comes the drag, though lowest only in the sense of not needing a wild or semi-wild animal for its object of pursuit. In strictly orthodox circles a drag hunt is always mentioned with somewhat bated breath, but at the same time it is by no means an amusement to be despised. Its followers do not claim for it that it is a high form of sport, while it is an excellent school for riding, and does not make so great demands on the forbearance of farmers or occupiers of land as either stag, fox, or hare hunting. The line of route can lie just where the master pleases; the horses need never enter a corn or clover field, or where there are root crops; and if a man objects to his land being ridden over, his wish can be respected without difficulty. To those who go out for the sake of a gallop a drag hunt is of short duration and makes but small inroads on the day's business.

The drag, however, is by no means a modern institution, for there is every reason to believe that in the times of the Stuarts trail scents were very common, and, as we know from Mr. Hoare's *History of Newmarket*, there was in Charles II.'s reign "a plate at Woodstock given to hounds running a trail scent over four miles," for which any gentleman might put in a hound; while at the same place in 1682 there was a buck and trail scent for hounds. The famous match between the hounds of Mr. Meynell, who then hunted the Quorn country, and Mr. Smith Barry, the Master of the Cheshire, shows that in the middle of the last century drag hunting took place. In its origin the trail scent was a race for hounds, but in course of time men began to ride to the hounds, and then a plan was hit upon for running a drag for the sole purpose of having a gallop.

A good many people say that the drag is not a sport, but at the same time even the most orthodox are loudest in their praise of hunting when the run after stag, fox, or hare most nearly assimilates to the drag, that is to say, when hounds go as hard as they can from start to finish. The foxhound must be regarded as an animal which can adapt itself to various circumstances, for he will run not only the usual beasts of the chase, but the otter and the drag as well, and when he has gone at his best pace for something like half-an-hour or forty minutes, he finds his reward in the paunch which awaits him when the drag hunt is over.

The *modus operandi* of running a drag is tolerably well known. Various masters have their own *recipe* for a drag, but perhaps the most common way is to keep a tame fox in the kennel, and then on hunting days to put the litter into a net, or it is sometimes put into a hare's skin. This is trailed over the ground, and every five minutes or so a few drops of oil of aniseed, or occasionally turpentine, are added, and after a little practice the hounds will stoop to this scent as readily as to that of the stag or fox. Generally speaking, the drag is laid by a man who runs the line on foot, but sometimes he is mounted. The former plan is, however, preferable, since the drag will not jump about so much as when it is trailed behind a horseman.

It is easy to arrange whether the line shall be stiff or not, and it should be understood that the drag is not laid over any trappy fences. The hounds need not of course be very valuable specimens, though in well-maintained packs, like that, for instance, kept at Windsor, a process of heading and tailing goes on, until they all go much of a pace. The usual plan is to have a check half-way through the run, when second horses are mounted, and after a few minutes the run begins again. A properly laid drag will leave a good scent behind it for about an hour after the runner has gone along, and even then the hounds go at a great pace. As before mentioned, the drag has taught many a man to ride. The fences may be big, and brooks may come in the way, but there is some sort of guarantee that a man will not find him-

self jumping into a quarry or on to a plough, as may be the case when hunting. Since, of course, every man who goes out with a drag hunts to ride, there is always more rivalry than is the case in other forms of hunting. A fast bold horse is necessary, and so long as he be a good jumper he need not be the most valuable animal in the stable, for he has not to make a long day.

It is rather surprising, perhaps, that so few packs of drag hounds exist. There are but eight, namely the Birkenhead, Cambridge University, Dublin County, Greenford, Household Brigade, Middlesex Farmers, Royal Artillery, and Staff College; and of these the most noteworthy are the Windsor and the Woolwich Drags, the former being kept by the Guards and the latter by the Artillery. In former days both Oxford and Cambridge Universities had each their drags, but the Oxford institution has now fallen into desuetude. At Cambridge, however, it flourishes greatly, the reason probably being that around that city the hunting is not so good as around Oxford, so the Cantabs make up for natural disadvantages by a drag laid over the best of the country.

In one respect a good many hunting men might learn from the drag hunts, since there is perhaps more good feeling between the farmers and the followers of the drag than in any other form of hunting. Hospitalities are not unknown, while in various other ways the kindness of the farmer in allowing his land to be ridden over is readily acknowledged by those who ride after what is sometimes called the "red herring."

W. C. A. Blew.

HARE—Let it be granted that a harrier is a hound that hunts the hare chiefly by scent, and we need waste neither time nor space in endeavouring to ascertain *unde derivatur*, for indeed it is of little importance what the harrier formerly was, whether he was descended from the talbot or southern hound, or whether his remote ancestors were those "Castoreans," or hybrids between hare- and fox-hounds, which Xenophon declared to be the only two sorts used for this purpose. What really concerns the modern sportsman is to understand how and with what equipage one of the most ancient and fascinating of pursuits is now conducted.

Packs—There are, at the present moment, according to the Rural Almanack, 119 packs of harriers in England, 2 in Scotland, and 28 in Ireland, making a total of 149 for the United Kingdom; and there are 48 packs of beagles. In 1879 there were 97 packs in England, 2 in Scotland, and 43 in Ireland, with 18 packs of beagles. In 1880, 99 packs in England, in Scotland none recorded, and in Ireland 40—beagle packs being 20. In 1881, 97 packs in England, none again in Scotland, 44 in Ireland, and of beagles 21. The curious feature of these statistics, and the reason of their being quoted is that as far as they concern England they are almost the contrary of what we should have expected.

Sir W. Harcourt's Act "For the better protection of occupiers of land against injury to their crops from ground game," or, to give the well-known short title, "The Hares and Rabbits Bill," was passed in 1880; and everybody knows the enormous destruction of hares which took place as soon as that Act came into operation; in many places, indeed, they became practically extinct, and it would naturally be inferred that the effect of such destruction would have been to diminish the number of packs of harriers. It is indeed a fact that several packs were given up during the eighties on account of the number of blank days they experienced; but as there are twenty more harrier establishments now than there were in 1880, we must conclude that the disappearance of the hare in some places was counterbalanced by his diminution in others to such reasonable quantity, that it became possible to hunt where before it was out of the question on account of the constant changing, which is a greater annoyance to the huntsman and does far more injury to his pack than an occasional blank day.

Formation of Pack—The number of hounds wherewith to take the field must needs vary according to the fancy or pocket of the Master. There is no reason why five or six couple of real good-nosed ones should not kill a hare, but they would take a long time about it, not being enough to cover sufficient ground in their casts. On the other hand, more than eighteen couple at the very outside get in each other's way, and tumble over and distract each other, for there frequently occur moments in every chase when the problem of a hare's passage over two or three feet of ground is considered of vital importance by the whole pack. They literally lay their heads together over it, coming back to this particular spot time after time, as their one reliable point of departure, and it is easy to see that on such occasions the less jostling there is the better.

To say that ten or twelve couple should be taken out, of course means that a larger number must be kept. Harriers are almost always worked in mixed packs, and as bitches go to heat usually at the most inconvenient periods of the season, allowance must be made for their seclusion as well as for absence on sick leave from accidents and other causes. But if a man has twenty-five couple of good working hounds in his kennel—and he ought to keep no other—he need never fear being unable to bring to the meet a sufficient pack for all purposes of true sport. How to get together that number of trustworthy harriers is a matter which will occupy his most serious attention, unless he is one of

those to whom money is of no object. In that case, the best thing he can do is to wait till some real good pack comes into the market; it is seldom that a year passes by without such being the case, and the prospective Master may well occupy some months in going about studying the manners and customs of hare hunters in various parts of the country. He will learn something everywhere, and be all the better equipped with knowledge by the time he makes his own start. If he can tempt the owner of any pack which specially pleases him to part with it privately, he had better not haggle overmuch about terms—it is impossible to lay down any rule as to what the cost should be, but speaking very broadly, about £100 will often buy the lot if he takes them old and young *en bloc*. Many and many a right down good old established pack has been thus sold for £25. In the case of the aspirant preferring to buy at auction, he must of course take his chance in that notoriously uncertain market. But five or six guineas a couple is a very high price, though instances do occur where they run into really large figures, *e.g.*, Major Wickham, who sold a celebrated and beautiful pack in the spring of 1897, realised in several instances as much as thirty-five guineas a couple, and a total of 500 guineas. Though a Master of Harriers must lay his foundation on purchased hounds, whether he buys a ready-made pack, or goes through the misery of making one for himself out of drafts picked up at random all over the country, the sooner he begins to breed for himself the better —no small part of the amusement of keeping hounds consists in watching the development of the young ones born and reared at home, and noting how far they emulate the virtues and vices of their parents; the latter will probably predominate, since it is far easier to reproduce evil than good; all the greater on that account is the pleasure when, as is not infrequently the case, the offspring is even straighter, truer, and stauncher than sire or dam. And once the Master has started breeding on his own account, let him, except in case of dire necessity, such as an outbreak of hydrophobia in the kennel, or his pack being over-ridden by a railway train, at once and for ever abjure having anything to do with drafts, beyond selling his own if his good luck or repute should bring him a customer. It is a true saying that the only certainty about a draft is that it consists of animals of which the owner, doubtless for some good reason, is anxious to be rid, and as the only reason which at all commends itself to the buyer is that of size, it is always because they are too big or too small that they are weeded. With puppies this may be a valid excuse, and puppies are the safest to buy, if buy you must. A present of a hound should never be even considered. Why should a man give away what is good? Or why should another accept what is bad? Even in the case of stallion hounds it is better to decline a gift. If an owner breeds, as nowadays most people do, from pure foxhound, there is no difficulty in getting a choice of small doghounds, and the fee, if anything is charged beyond a tip to the kennel huntsman, is but trifling. As the less is, or can be, contained in the greater, a brief sketch of an establishment where things are really done in first-class style without unnecessary display or profusion, may be useful to those whose ambition soars somewhat higher than the possession of a scratch pack—a mere agglomeration of dogs such as one often sees working under the name of harriers. Be it remembered too that in many respects it is quite as cheap to have things smartly as slovenly done, for instance in the matter of cleanliness. If a man is kept to sweep and wash the kennel and prepare the food, he will require just as much pay for being careless, dirty, and unpunctual, as he will for having everything in apple-pie order and ready to the minute. See therefore that he earns his wages.

Accommodation—Let us suppose then that our Master has got a pack together strong enough to hunt three days a week, and that, having obtained a roving commission to pursue the hare over a wide tract of country, he must lay his account to have now and then long distances to come home, besides an occasional 15 miles to covert. For this purpose he will have provided at least 25 couple, standing as nearly as possible 21 inches; that is, if he hunts a mixed pack, as most likely will be his choice. If, however, he chooses to divide the dogs and bitches, he will take the latter at 19 to 20 inches average, and run anything over that standard with the dog pack. For the accommodation of this number of hounds, he will require 2 yards with sleeping rooms attached, each yard to be about 22 by 18 feet, paved according to the fancy of the proprietor. (We are supposing always that our M.H. is starting everything *ab ovo*, and can have what he wants in the way of building.) There is nothing better than asphalte, scored and slightly inclined so as to facilitate washing; it wears far better than flagstones, which are sometimes very difficult to procure, is cheaper than brick, and is so easy to patch and mend when chipped. The lodging-houses should be thatched with straw inside, by far the best way of keeping a good mean temperature in summer and winter; and, if the sides are tiled half-way up, the rooms not only look more cheerful but are easier to clean. The beds should be raised a foot or so from the floor, and there is no need for much space per hound; they like to lie close and keep each other warm in cold weather; when it is very hot, the door may be left open and they can go outside. It is well also to have a third smaller yard where sick hounds and bitches at heat can be left, but it is evident that the farther the latter

are removed from their comrades the better. Where there is no lack of elbow-room, it may be a good plan to have in addition a good-sized gravel yard, where occasionally the whole pack can run together, but when forces are thus joined, it is highly advisable for the feeder or some one whom they know to be within hearing, as a quarrel may arise at any moment amongst hounds. In fact it takes very few to get up a wrangle, which, if not promptly suppressed, nearly always results in serious mischief, when the best hounds are usually the victims, perhaps because the real good ones are often a little bit queer in their tempers. One of the best ways of preventing these outbreaks is absolutely to forbid the presence of terriers within the kennel walls on any pretext whatever; they are the very dragon's teeth of discord.

A boiler house for cooking the food will be required, and as this will open into its own small yard, there is no necessity for a feeding-room unless such be the whim of the paymaster.

The whole of these buildings should be surrounded with a high wall with coping stones projecting on the inside. Iron railed doors and gates are best; if wood is used, they must be covered with iron or zinc as far as hounds can reach. It is astonishing how soon they can gnaw through woodwork, and how much pleasure they apparently find in the employment.

The water supply will have to depend on the possibilities of the place. Anyhow, fresh water must be kept in troughs both in the yards and lodging-houses; the ideal plan, of course, is to have a stream constantly running through them, that being the only way of preventing hounds fouling the water; it makes, moreover, the sluicing down of the kennels a matter of ease and therefore of tolerable certainty; but there is not always a water company or a reservoir within reach, so the best must be made of the existing situation—always insisting that drinking water shall be accessible, and the places kept scrupulously clean.

Feeding—The food for such a pack will be the same as if they were engaged in their birthright pursuit of the fox. The best oatmeal and clean horseflesh must be their portion, with greenstuff boiled up occasionally, especially in the spring months. It is true that up to a certain point harriers will work well on Indian meal, which costs far less than oatmeal, and is indeed as cheap a feeding stuff as can be found; but the certain point means that they must be given neither long days nor long distances. You could hardly get a maize-fed pack home at all if they had an 18 mile trot at the end of the day's work, whereas those nourished on oatmeal would jog along round the huntsman's horse with their sterns over their backs.

Spratt's fish biscuits make a capital change from flesh during the non-hunting season, and are perhaps to be preferred in hot weather, and it is said that Hobman's dog cakes are equally good, but a pack of harriers which—not being dependent on the casual attentions of servants with other occupations—is properly exercised in and out of season, can stand a very liberal diet. As to time of feeding, the system may slightly vary in different kennels, but it may be laid down as a good general rule never to feed till one hour after returning from the chase. Hounds eat better than if given their food at once, and the interval may be occupied by having them sluiced over with warm water and then sprinkled with good broth; as is well known, hounds soon lick each other clean when this has been done. In summer, after horse exercise, they should never be fed till evening, no matter how long they have to wait; they sleep better after the late meal.

The hounds that have hunted should always lodge together, those that have not been out are restless, jealous, quarrelsome, and apt in consequence to disturb the rest of their tired companions. There is no reason why dogs and bitches should not sleep together, if care is taken that none of the latter are at heat or near it.

Staff—Presuming always that the Master hunts his own hounds, or at any rate that there is a gentleman-huntsman, the staff for such a pack need consist only of two men—a whipper-in and kennelman. The latter will never go hunting; he will find plenty to do looking after the hounds left at home, and having all ready for the return of the day's workers. The whipper-in will take the pack to covert, assisted by the groom, who takes on the Master's hunter, and who can remain out with hack or cart to help on the home journey should the M.H. be disinclined for the job. It takes a very short time to make hounds acquiesce in being thus handed over to the servants by the beloved provider of sport; indeed, I am not sure that they do not go home all the more steadily for such a signal that the business of the day is concluded. With a pack of this standard, in good condition, there will never be any necessity for vanning, always an expensive and inconvenient process which makes hounds lazy and dependent. "Where are your hounds?" said a fond Master to his colleague-huntsman whom he met in company with but a few couples. "Those that are not eating sausages are looking for the van," was the reply; the moral of which is that to do real work a pack should never be petted or spoilt like children.

Cost of Establishment—The following is a rough estimate of what such an establishment as has been here described would cost. The figures are supplied by a gentleman who has quite lately given up the cares of Mastership, and may therefore be taken as up-to-date. He puts whipper-in's book at £250. This included the man's wages, those of the feeder and flesh. Meal and biscuit bill, £140; rent of house for

head man £16; keep of horse and a half £80 at least; liveries £20; dinner to farmers who walked puppies £20; in fact he arrives at a total of between £600 and £700 a year, and does not think that any one could keep twenty-five couples of hounds properly for less—an estimate which would surely frighten away the majority of aspirants, unless they bear in mind that the establishment above described is one conducted on the best and most liberal style consistent with absence of pomp or swagger, and that it is quite possible to have an immense deal of sport two days a week (three is an unusual number for harriers), at a third or even less of this outlay. Otherwise there would be very little hare-hunting in England in these days of general retrenchment in the agricultural counties.

A man may get together a cry of dogs for a comparatively moderate sum, more especially if he goes in for that most doubtfully bred animal called the genuine harrier. He will get some queer-shaped and some very rough-coated ones—two defects which even by careful breeding he may never be able to eliminate, the mixed ancestry being wont to reassert itself; but with perseverance he will get plenty of nose, plenty of music, and quite pace enough for the sort of horse best suited for his purpose. Great jumping power rather than speed in his mount is the hare-hunter's requisite; he will kill a lot of hares by steady hunting and show much sport to his field in the process. Fifteen or sixteen couples will suffice for this modest turn-out, and of these, with fair luck, an average of twelve couples should be able to show at the meet. Nineteen inches is, in the opinion of many good judges, a sufficient maximum height, and they are content with bitches on a smaller scale. It is certain that in countries where foxhounds are kept, harriers of this standard are much less likely to kill an outlying fox even on a good scenting day—and friction between the red and green coats is thus avoided. A small pack again, naturally eats less than a large one, and though, as already stated, harriers cannot do hard work and long distances without oatmeal, yet the Indian meal may well be used where six or eight miles is an outside distance to covert, and the day's hunting does not last more than four or five hours. It is better to have two servants for the kennel, but the work can be, and often is, done by one man, for whom however some assistant *must* be found to help take the pack to covert; otherwise they soon find out their attendant's helplessness, are all over the place, and perhaps have had a run and a kill before arriving at the fixture. A smart boy can easily be drilled into performing this service on foot if the master rides his hunter on.

The combined whipper-in and feeder will have the evening meal prepared before starting, and will only have to warm up on his return. The hounds left at home must look after themselves, which, as they will be but few, they can do very well. The M.H. must either come home with hounds himself, or get one of his field to do so. One horse will be quite sufficient for the whipper-in if he rides quietly; if he does not, he should be dismissed. Harriers will stand very little rating and less whipping-in. Some further economy may be practised in the kennel. It is evident from the figures quoted that in our ideal establishment the hides and bones were the perquisite of the servants; the former at least the Master may well claim as his own. He will give about £1 for each horse that comes for slaughter, and the skin will fetch nearly that sum. No dead animal should ever be accepted at the kennel unless it has died from the effect of some accident, and the history of the death is satisfactory and well authenticated; otherwise poisonous carrion will find its way to the larder—dangerous to the hounds that eat it, and still more so to the men who have to cut up and handle it. Servants are terribly careless in such matters, and unless there is absolute prohibition of foul flesh they will run insane risks of blood-poisoning.

The whipper-in's wages will be £1 to 25*s.* a week—clothes when necessary—not a regular allowance of livery, which often leads to a more or less dishonest arrangement between the man and the tailor, and his cottage must be given, unless there happen to be spare rooms at the stables which he can occupy.

For the summer horse exercise, which is most important, he can have the assistance of a groom, while, if his hounds are fond of him, as they certainly will be if he is worth keeping, he should be able to walk them about by himself in some paddock where they can roll and eat grass—the oftener he does this the better. By doing things in this comparatively humble style, it will be seen that great saving may be effected on the previous estimate.

For most of the many years during which I kept harriers their food cost me about a penny a day per hound, but their solitary attendant was a curious old-fashioned retainer with unusual notions of thrift. A second horseman whipped in, and a horse had to be reserved for this express purpose.

For the sake of illustration I have taken the accounts for 1888, 1889, 1890, when 15½ couples cost £114 10*s.* per annum. This sum was made up as follows: Keep of hounds, kennel man's wages, medicine, and other incidental expenses, £83. The keep of horse for 21 weeks (he was only debited to the pack during the hunting season) at one guinea per week, £22 1*s.* The allocated portion of groom's wages for same time at 9*s.* per week, £9 9*s.* This was the lad who whipped in.

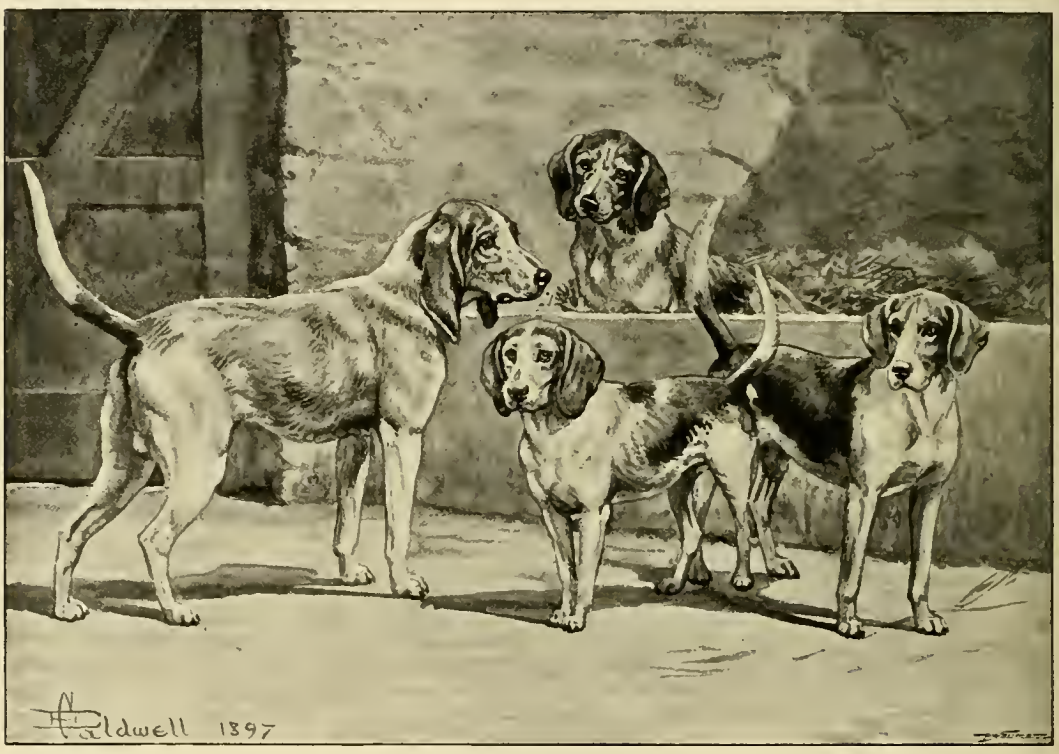
Things were roughly, perhaps very roughly, done, but we had capital fun for all that.

Sending puppies out to walk is just as necessary with harriers as with foxhounds, and I have here made no allowance for expense on that score. The farmers on my estate, or on that of my colleague, Colonel Estcourt, were most obliging in the matter, as indeed they are in all countries, and rarely, if ever, sent in a bill for damages. Sometimes, when puppies become intolerable to the farmer's wife, they are returned to kennel rather sooner than wanted, in which case the only thing to be done is to give them as much liberty as possible at home.

of the hunt bring his hound with him; it looks sportsmanlike and encourages healthy rivalry.

Harriers housed, fed, and exercised, on the lines above laid down, should be capable of doing great things if properly handled, and though he who pays the piper has every right to call the tune, and each M.H. may hunt hares after his own fashion, yet there is a right and a wrong way of doing everything. A few remarks therefore as to field management may be of use to beginners.

Field Management—The system of our forefathers of rising at cockcrow and hunting up to the hare in her form has been long and wisely abandoned; it must have been a slow



TYPES OF HARRIERS.

Beagles—The pursuit with beagles is no doubt a form of hare *hunting*, and a very prolonged method too. There is but seldom any hare *catching*. If beagles are small enough to give their field any chance of living with them, they will want a rare scenting day and a long one to effect a kill. If the pack is not of the miniature size, a man may easily do serious injury to heart or lungs without seeing much of what happens in the chase. It is absurd to ride to the little fellows, a horse is wasted on them, so why not have rather more size and a pace that will kill the pursued instead of the pursuer?

Still, beagles are better than nothing, and can be kept cheaply enough; it is not a bad plan to make a trencher-fed pack, and let each member

process, and they were as likely to spend an hour in puzzling out the line of a fox as of their proper quarry. Half-past eleven or midday is now the favourite hour for the green-coats to assemble; even in the short days they have thus plenty of time for their purpose, and if hares are not too scarce and adopt their usual circular tactics, the farmers of the locality may have had rather more than enough of trespass on their land. Their permission will, as a matter of course, have been first obtained, and their convenience consulted as to the day of fixture. The immense majority of them are most good-natured and liberal in this respect, and very many are exceedingly fond of a day with the hare dogs, but all are annoyed and disgusted if a heedless Master announces his meet on the

day of a neighbouring market. He must never forget, too, that as every farmer has the right of shooting hares on his own holding, leave to hunt them is a very material concession.

Harriers should be allowed to spread about at will in drawing. Hares are often very difficult to move, and a hound who will take trouble in looking for his game is of much value. Their usual indifference to this part of the business may be attributable to the fact that they appear unable either to wind or see a squatting hare. Hares are well aware of this, and when beaten will let hounds run over them. It often requires a prod from a stick or the flick of a whip to stir them up. If the boys of the village school are about, they will start a hare if there is one in the country--but their ceaseless yelling, as long as the pack is within sight or hearing, more than counteracts the advantage of a quick find.

It is impossible to say where a hare may not be lying; they are not particularly fond of hedgerows when the leaf is falling, but it is hardly safe to assume they may not be sitting there. They like dry ground beneath them, but are very indifferent as to shelter; it is a common thing to see a hare squatting on the side of a hill with the wind blowing into her fur. In this respect she is far less luxurious than the fox.

If she jumps up in view of the pack, they must and will race after her, but when she is moved out of their sight the less said the better.

It is idle to hope that the viewer will hold up his hat and hold his tongue, but in the rare cases when he does so, and the huntsman is allowed to draw his hounds quietly across the line, a much better beginning will be made than with a view. Hounds will have their noses down at once, and keep them there unless interfered with. Harriers soon get to look out for holloas; there is so much of it, as somebody is always seeing a hare and shrieking as if he had never seen one before. It is invariably the hunted hare, too, even though the fresh form is steaming under their eyes. It is far easier to get harriers' heads up than to get them down again—indeed, it is no exaggeration to say that were it possible to collect a field exclusively composed of the dumb, hardly a single hare would escape a decent pack on days when there was an atom of scent.

The huntsman must of course carry a horn, and so must the Master where one man does not double the parts; it is the best and quietest means of signalling to each other and to the pack, who moreover are not so excited by its sound as by the voice, and become perfectly indifferent to it when blown with the unnecessary frequency of a beginner. On the whole there is not much harm done with the horn. The same cannot be said of the whip, which is a most potent instrument of evil in bad hands. To most whippers-in the word "Put 'em to me," is the signal for a frantic charge, cutting and slashing at every poor animal within reach. The Master will do well to forbid his servant ever to strike a hound at all, the whirling and crack of the lash is quite sufficient; even pure-bred foxhounds will sometimes sulk under punishment, but the so-called true harrier, *i.e.*, one descended from several generations of ancestors exclusively employed in hare hunting, is likely enough to fly to the heels of the huntsman's horse for protection, and there remain for the rest of the day. Sometimes he may go home, which is neither seemly nor conducive to sport. It is therefore obvious that volunteer whipping-in should be as much as possible discouraged, though, as it is often well and kindly meant, it is not easy or wise too sharply to rebuke the offenders. Any usurpation of the huntsman's authority, however, must at all risk be put down with the high hand at once.

"Let 'em alone" is the maxim by which, with a good many exceptions, the huntsman will be guided, and on all occasions he must leave the pack to make their own casts on coming to a check before he takes them in hand, when he must trust to luck, which he may call good guidance, in the event of hitting off the line. It is impossible to say what a hare may or may not have done, so manifold are her wiles, and to the true hare-hunter the chief pleasure of the game is to watch his hounds unravel a knotty problem and then dash off in the delight of a well substantiated scent, or in view of their prey at last aroused from her lurking place.

Old hounds often get very cunning knowledge of whether a hare has squatted or "clapt" as it is often called. They have an indescribable way about them which says as plainly as possible to an expert "In our opinion she is down." Then, as in cases where a fox is supposed to have gone to ground, the huntsman may make his all-round cast at once, and return if it fails, to search for the recumbent one—but he should leave some one to watch lest she should sneak away unseen, as she will probably try to do when she thinks all backs are turned.

On account of the hare's many twists and doublings, it is even worse to press on harriers than on foxhounds. Moreover, what is called the true harrier will not stand being ridden over. He can easily be driven two or three fields beyond the line, and when "harked back" is apt to be wild and unsteady, and will not settle down to work again till too late. For this, amongst other reasons, it is important that, if the Master is huntsman, he should have an accredited deputy to keep his field in order, not only when hounds are running, but also when drawing or casting—for he must do his utmost to prevent unnecessary damage to the land, otherwise, as the same ground may be traversed a dozen times in the course of the day, the nuisance will become more than the most sporting farmers can bear, and those who merely

tolerate the amusement will be apt to send curt requests that they may be troubled no more with the hare dogs.

Unless the pack is a subscription one, there is no need to advertise. Cards can be sent to those who ought to know—plenty of those whose room is preferable to their company will be sure to find out—but a good deal may be done with care to limit the number of followers.

Of all the devices adopted by the hare to baffle her pursuers, running the roads is perhaps the most effective. She will go a couple of miles along the macadam if she meets nothing. There is seldom any scent, and hounds get herself to the fosse, along which she went as hard as tired legs would let her. In a very short time there was a long tail; the leading hounds were never far from her, but she took advantage of a dip in the ground to jump on one side and squat in the ditch. On went the leaders full of confidence and dash, but some slow old hounds, toiling along in the rear, poked her up, and she actually overtook and raced past the foremost pursuers, who, once more seeing her, were very much confirmed in their good opinion of themselves, though of course they deserved to lose her.

Provided always that the walls are fairly negotiable, a stone-wall country is first-rate

She Squatted in the Ditch.

flashy and jealous, trying to pick it up in the straight conducting line. The huntsman is then at his wits' end to know what to do; and, unless he possesses that pearl of great price, a hound with a road nose, he more often than not loses his hare. The only thing he *can* do is to trot very slowly along, and try every gateway and likely-looking spot where she may have turned off or lain down, but it is a mere matter of luck unless he has the real road hunter.

Not on the hard high road, but on the old fosse way which runs as straight as an arrow for miles through part of Wiltshire and Glo'stershire I was once witness of an absurd spectacle.

A hare which we had hunted for some time jumped up in full view and at once betook harrier ground, until it gets dry in the early spring. In those large open fields one would suppose that a hare might fall a readier prey than elsewhere, but she is fully equal to the occasion, and, to the manner born, baffles her enemies quite as often here as in the fenced enclosures. It is said, and I quite believe it, that she will run the tops of the walls for considerable distances and squat on them, but I have never actually seen her do this, though I have often lost her in a mysterious manner that suggested some such method of escape.

It is a great, though not uncommon, mistake to suppose that hares have a dislike to water. Those at any rate who have been bred near the banks of a river take to it like otters, nor do

they care how often they cross and recross, and the advantage of pure foxhound blood is very apparent on such occasions. The hounds dash across while the more plebeian harrier is thinking about it; indeed, it is not uncommon for some of the latter to stay lamenting their hard fate on the hither bank with unseemly outcries; when this happens, the hangers back should be kicked or thrown into the stream without loss of time. I can only remember two instances of hares drowning, and in each case they were dead beat.

Harriers require blood, now and again, at least; it is difficult to imagine how Sir Roger de Coverley's pack could have continued to take any interest in what to them must have been a most insipid occupation; anyhow, the modern hound would become slack were he never allowed to kill, but, though huntsmen do not like to be beaten and at times become very bloodthirsty, the impartial observer must fain confess that the kill is the worst part of the performance. One cannot help feeling that "poor is the triumph o'er the timid hare"—so pitiful is her appearance in her last moments. Nevertheless, it is fair to remember that even the shyest of birds and beasts, which are always on the alert and ready to fly in apparently abject terror on the most groundless alarm, cannot possibly suffer the agonies of fear with which we are wont to credit them; or, instead of waxing fat and hearty, enjoying life as they obviously do, they would be shrunken abject creatures destitute alike of health and beauty.

When the "who-whoop" has sounded, the paunch will be sufficient reward for the pack, except on very great occasions after an unusually severe run. They will moreover often enough secure for themselves the whole carcase by tearing it before it can be rescued. The disembowelling process has of course to be performed by the whipper-in, and a very disagreeable duty it is; the quicker he is about it the better: hounds should never be kept baying and waiting; give them what they have earned and be off, whether it be for home or a fresh draw. The ears of the hare must be retained for a trophy to nail up in kennel or stable, and the body should be the perquisite of the farmer on whose ground it was originally found.

If it be decided to draw again, try to get on to "pastures new" for the farmer's sake as well as for the greater chance of sport on unfoiled land. It is, however, nonsense to suppose that a hare can be prevented from running in the direction she pleases. "Start her with her head towards the good country" is often the request of the ignorant when she is seen sitting. You might as well place before her a chart of the line she is required to take. She will have her own way in the most literal sense of the term, and it is but rarely that she is so bustled up that she loses her head, and gets out of her knowledge. When this does happen the run that sometimes ensues would do credit to a dog-fox.

One of these red-letter days may also occur now and then in pursuit of an old Jack in March, when hares are scarce, with the difference that he knows what he is about and is returning to the home he quitted when on pleasure bent, and he will very likely get there with a whole skin, especially if he can bring a fallow or two into his line.

Save for the chance of a good point, March is certainly the worst of the hare-hunting months, and February is generally reckoned the best. Some people prefer November and December, but hares then are usually weaker than they are later on in the season.

Those who care to play at cub-hunting do so by going out early in September and October, though it is difficult to see the advantage of the proceeding; they can hardly want to kill leverets, and the puppies, if they have been properly exercised during the summer, will know their comrades and pack readily enough when business begins in November, though of course only a portion of the new entry will go out each day; the presence of a few neophytes is good-naturedly tolerated by the old hounds, who yet are amazed and disgusted by the vagaries of too many of the rising generation.

As to the manner in which a man shall ride to his own harriers, purposely but little has been said. He must please himself, and there is certainly as much scope for individual taste in that respect as in the more arduous pursuit of the fox. For him who likes being perpetually in the air, unrivalled opportunities are afforded by a hare-hunt in any enclosed country. He may be led into more queer corners and find himself negotiating more lonely places in the course of a couple of hours after a stout cunning old hare, than might come in his way during the greater part of a season of the "Nobler Science"; he will also in all probability have the advantage of testing the feasibility of these fences from either side. The most perfectly trained hunter that can be found is the mount on which to follow a sharp pack of harriers, though it does not in the least signify if he is somewhat deficient in speed. On the other hand, should a man restrict himself entirely to gates as a means of access from field to field, he will unquestionably be able to see a very large proportion of the sport. He will even see an immense deal if he chooses to sit still and "wait till they come round again."

At the same time, though the "let 'em alone" system cannot be too highly commended, there is no doubt that the huntsman, whether on foot or horseback (for this remark applies quite as much to beagles as to harriers), ought to be in a position to see exactly when and where his hounds throw up, unless he has a trusty companion on the accuracy of whose observation he

can implicitly rely. When obliged to make a cast it is as well to have some data on which to act.

Whether a man ride hard or little, or not at all, if he is really fond of hunting for hunting's sake—and no other should encumber himself with the cares of an M.H.—he will find the chase of the hare a most fascinating sport, and in these days of enormous fields with foxhounds, when it is impossible without doing mischief to obtain much insight into their or their huntsman's work and tactics, there are no better lessons in the science of Venery than those afforded by the "Merry Harriers."

SUFFOLK AND BERKSHIRE.

BEAGLING—There are two ways of employing the beagle in the field sports, in hunting and in shooting. Several couples are sometimes used in coverts for rabbit-shooting: with this form of sport we are not now concerned, but with the hunting of the hare with beagles. As canoeing and small boat sailing are to yachting, so is running with beagles to the more expensive forms of the chase. That foot beagles are every year becoming more popular cannot for a moment be doubted, and beagles now take their place at Peterborough. The rapid growth of athletics may have had something to do with it, and the love of hunting which is in so many of us, a good deal more; but, whatever the reason, packs of beagles have increased in number.

When compared with foxhunting, harehunting may appear a tame sport. There are no fine horses and red coats to be seen, no crowd, and no premium on hard riding. In short, the credit of maintaining a good place and jumping hedges and ditches is due to the runner's pace, stamina and activity, instead of the powers of a horse. Farmers, again, are not averse to beagles crossing their land, except here and there. There is nothing like a large field, and men on foot are more careful of crops than those on horseback, while, as they are not so keen to jump as the mounted division, they generally do but little damage to fences, and they need not do any at all. The farmer, moreover, can have his day on foot at absolutely no loss to himself, while, in common with harriers, beagles do the foxhunting fraternity a good turn by disturbing outlying foxes and causing them to return to coverts where they will be more easily found by the hounds.

Hunting the hare with beagles is especially the poor man's hunting, and a hunting establishment can be maintained at comparatively small cost. There are many packs in which a kennelman is the only paid assistant, and he sometimes discharges some other duty in connection with stable, garden or shooting kennel. The number of hounds taken into the field may be from six to ten couples; no horses have to be bought and foraged, and there are no hunt uniforms, save perhaps an inexpensive jacket when some distinguishing dress is deemed advisable. In return for a small outlay, and, in some cases, a small subscription, one sees a great deal of interesting hunting and enjoys plenty of exercise, and this, to a busy man who cannot afford more costly sport, means a good deal.

At Peterborough Show the maximum height for a beagle is sixteen inches, and at the show this year (1897) all the exhibits but about two or three ran the limit very closely. Sixteen inches is possibly too big for beagles which are to be hunted on foot, because on favourable days they can get away from the huntsman and whippers-in. That they should not do so is obviously a matter of great importance, because they might follow their hare into coverts, disturb them, and possibly upset sundry shooting or foxhunting arrangements. In that event the wrath of some one would be aroused, and on the performance being repeated, a proposal to abolish the beagles might be made. Indeed, it is no bad plan to have some one out sufficiently well mounted to be able to get on and stop the beagles if from any reason they should get away from the officials, but, save in the case of this person, and any aged or infirm supporter of the pack, the use of horses or ponies in the field should be rigorously forbidden. It needs but a very little pressing on the part of a few horsemen to make beagles go faster than they otherwise would, and then they are necessarily less under the control of the huntsman, when half the charm of hunting beagles vanishes. From thirteen to fifteen inches is quite big enough for a beagle, and, taken all round, fourteen inches may be set down as the ideal size, as they will then be big enough to kill a certain number of hares, but not big enough to get far away, save perhaps on very good scenting days, from their followers. Just as the harrier has been largely crossed with the foxhound, so has harrier blood been mingled with that of the beagle, with the result that the pure breed is not always easy to find. Still, if hounds sufficiently small can be acquired to suit the master's purpose, the exact strain may not matter so far as sport is concerned, at any rate at the outset, and when once the pack is started the master can breed to his own ideas.

Reference has already been made to the question of riding to beagles, or rather to the necessary exclusion of all but the official horse and perhaps one or two more from the field; but it often happens that farmers, before granting permission for beagles to hunt over their land, make it an express stipulation that no horses or ponies shall be allowed. It is sometimes the case that beagles hunt over a district, or part of it, which is already covered by staghounds, foxhounds and harriers, in which event the farmer sustains his full share of whatever damage may be attendant upon

the visits of the different hunts; so, when application is made for permission to run beagles, it is not surprising that as a condition precedent farmers should stipulate that the field shall consist exclusively of pedestrians. In any case, however, it may be as well to point out to the farmer that it may be advisable to have one mounted person out to prevent hounds from running into coverts, as before mentioned.

Then again, the masters of other packs have to be thought of. Before taking any steps to establish a pack of beagles, every master likely to be affected should be consulted, as hunting of every kind exists only on sufferance. So far as the law of the land is concerned, nothing more is required than to obtain the consent of landowners or occupiers so that the master and his friends shall not be trespassers, and strictly speaking the owner of land and coverts in one country may warn off the pack in whose country his estate is, and invite some other master. The acceptance of any offer of the kind is, however, quite another matter, and no one worthy of the name of a sportsman would do otherwise than observe, both in letter and spirit, the unwritten law of hunting. Any one, therefore, proposing to establish a pack of beagles should at once consult any master of foxhounds or harriers who already hunts over the same ground. It is not in disparagement of foot beagles that one must place it among the minor forms of the chase, not because it is the least interesting, but because it is the cheapest. A vast amount of money is expended on foxhunting, and it therefore naturally takes precedence of all other forms of hunting, while, as horses have to be found for harriers, they come next. Still, among masters and would-be masters, there is as a rule a kind of freemasonry which prompts them to do the best they can for one another, though, at the same time, there may be reasons why another pack should not be started. When once an understanding has been arrived at, it need hardly be said that the master of beagles should do his utmost not to interfere with the sport of others, and should so arrange his fixtures as not to interfere with those of any already established pack, even though his own amusement may, on occasions, be curtailed.

The beagle kennel need not be an extensive or expensive affair, though, if the occupants are to be kept in a state of health, sanitary precautions must be observed; in fact, the beagle establishment should be a foxhound or harrier kennel in miniature, with, of course, conveniences for breeding if the master makes up his mind to breed, as he probably would. The general treatment of beagles is, allowing for altered circumstances, much the same as that for foxhounds and harriers. There is, indeed, if possible, even more need for condition than in the case of larger hounds, because beagles, being comparatively slow, must work at their best all the time. The process of conditioning should therefore be begun early, in order that by the first hunting day they may be as fit as possible. In the main, too, the manner of hunting the hare is the same as in the case of harriers, but the huntsman of beagles may be less particular about cutting off a corner than he who hunts a fleeter pack; but casting must not be performed in a hurried manner, lest the hounds head the gallop, and those who are acquainted with other forms of hunting will know that those hounds hunt the best which are not too much interfered with.

In first forming a pack of beagles care and judgment are required. If a little pack which has been carefully bred be in the market so much the better; but should the new master have to depend on drafts he will find that he has no easy task before him, and he will learn, probably for the first time, how many faults a hound can have. When all preliminaries are arranged, the pack should be started as early in the season as possible, and the first dozen days at any rate should be strictly private, for the staff will in all likelihood have more than enough to do to keep order. Some of the pack will be too fat, some too slow, some too big, and all this will want attending to. At the outset there is no need to be too particular about appearances. If good looks can be had, well and good, but working qualities are the first consideration, and as the resources increase the ungainly ones can be drafted; but let a young master beware of too hastily getting rid of a real good hunter.

After several undress and dress rehearsals the master may venture to ask a field to meet him, and if he is his own huntsman he will speedily find that there is ample scope for all the observations and cleverness he possesses. A knowledge of the habits of the hare is naturally of great value, for hares do not have their forms in the same field all the year round, and as a rule they do not sit where they feed. When the hedges and trees are pretty well bare of leaf, hares come out into the fallows, where, as in September and October, they affect turnips and other covert, and when drawing turnips there is no harm in making a little noise or even in having some of the field in advance of the hounds, for a hare is somewhat easily chopped in turnips, as they seem to lose their heads. In drawing ploughed lands the huntsman should walk across the furrows, as he will then be able to see up and down each; and as beagles are not possessed of great pace they should view their hare at the start as often as possible. The inexperienced master will do well to miss no opportunity of conversing with practised hare hunters, for there are many wrinkles to be picked up. A huntsman for instance ought to know a hunted from a fresh hare, while at a check it is nearly always safe to cast in the same

direction as that in which the hare has been running. For instance, if she has been more or less circling from left to right, the cast should be to the right.

The beagle kennel, like every other, will be visited by illness, and when the master comes to breed his own hounds distemper will have to be reckoned with. There are, however, plenty of books treating of dogs in health and disease, and the young master of beagles cannot do better than master the contents of some of them.

W. C. A. BLEW.

OTTER—To the enthusiastic lover of hounds there is no more fascinating sport than the pursuit of the otter. Coming as it does at a period of the year when the foxhound is confined to his kennel, the hunter to his loose box or paddock, and when the voice of the harrier is no more heard in the land, it is doubly welcome, and doubly sweet to the true sportsman. Besides such merits as these, it has the recommendation that it requires no costly outfit, no expensive stud of hunters to enable its lovers to partake of the sport. A good physique, sufficient activity, and a strong pair of boots are all that are needed in order to see to its end the best possible day's hunting. And although packs of otterhounds are in these days migratory, and "lay out" for a fortnight at a time, covering during that period a wide stretch of country, yet the resting places selected are no costly caravanserais, but rather the old-fashioned riverside fishing inns, loved of old Izaak Walton and his fellows, where a man may rest peacefully without apprehension of the score that is to be presented to him on his departure. And if there be anywhere better companions than those who track the otter up and down the lovely streams of England and Wales, we have yet to hear of them. A man may do worse than spend a fortnight among such scenes and in such company.

"Countries"—The otter-hunter in these times is a very peripatetic philosopher. "Countries" belong to various packs, and the jealousy among them is great, if even the head waters of some river belonging to one pack are disturbed by a raid on the part of some other establishment. They are described as consisting of certain rivers, some in one county, some in another. A Devonshire pack will exercise the privilege of hunting rivers in Hampshire or Dorsetshire, or a Durham establishment take its fortnight or so across the Border into Scotland, but all have countries, as clearly defined as if the boundaries were laid down on some map. A list of the packs now hunting in the United Kingdom is appended, but owing to the wanderings abroad of each establishment, a very wide circle must be drawn around the kennel to include all the country hunted by the pack.

Otterhounds—The true otterhound is in our opinion one of the genuine ancient types of dog, viz., the rough or broken-haired hound, hunting by scent alone, the bloodhound being the prototype of the smooth variety. In the same way the Scotch deerhound and the English greyhound are the types, rough and smooth, of the gazehound.

The otterhound is a very strong, short-legged dog, not, as a rule, over 22 inches high. Shaggy and rough in his coat, with very pendant ears, a high "peak" somewhat like that of a bloodhound, and a very musical deep voice. He should have straight legs, fine shoulders, without which there can be no activity, and especially he should have a strong back and powerful loins, which are essential to assist him in scrambling in and out of the water, up and down steep and slippery banks. In colour he is frequently black and tan, red, sandy, or black and white, with the usual hound markings. Some packs of hounds, especially in the north of England, have kept their strains pure for many generations, and possibly owing to in-breeding, size has been somewhat lost. Some years ago the late Hon. G. R. C. Hill, who was most careful to keep his pack as one of genuine otterhounds, crossed a bitch with a foxhound and put the progeny again to the pure otterhound, and thereby produced several hounds of the very highest class. They threw back in appearance to the original pure breed—the otterhound; a pure breed will always assert itself. They were very rough and with good tongue, but retained the size and the fine shape of the foxhound, without in any way deteriorating from the character of a pack of pure otterhounds.

Many sportsmen of great experience eschew the otterhound altogether for this chase, and use the pure-bred foxhound—an animal that, like the well-bred hunter, cannot be put "out of his place." With these packs some of the best sport obtainable has been shown. Mr. Collier, for fifty years master of the Culmstock Otterhounds, and one of the most skilful and popular masters of hounds that ever sounded the horn, stated to the writer, only a few years before his retirement, that "in all his experience of otter hunting he had never seen an otterhound," and that he yet hoped to have a day with one of the more northern packs in order to see what they were like. Mr. Collier had probably killed more otters than any man of his time, except the Hon. G. R. C. Hill, but during all his life he had used either harriers with a very strong dash of foxhound blood in them, or, latterly, pure-bred foxhounds. Many of his hounds were drafts from the Devon and Somerset Staghounds—giants from half the kennels in England—that could no longer run up in that arduous chase, and consequently he took the field with a pack of very large-sized hounds, all of pure foxhound breed. With them he

generally had running two or three Welsh foxhounds, or harriers, rough hounds, most excellent in their work, but inclined to be untrustworthy where riot is concerned. The Carlisle pack is one of true otterhounds, and very beautiful specimens of the breed do they occasionally send to the benches of one or other of the big shows. Mr. Wilkinson, of Neasham, whose sport is second to none, arrives at it with a pack of mixed breed.

On the whole the rough hound stands long swimming in cold water better than the smooth. He is also a lower-scented hound, and more free with his tongue; hence the drag of an otter can frequently be hunted two or three hours later in the day with a pack of otterhounds than would be possible with foxhounds. These latter are most excellent when the otter is found, especially in streams where very long continued swimming is not required, but many will not speak at all to a drag, and few to a cold one. It is easier to find the otter with otterhounds, and that is a very great point—but foxhounds will often kill him better than the smaller rough hounds, when once they have found him.

Besides a good pack of hounds, two or three terriers, and good ones too, are absolutely necessary to accompany the pack. These are not very easily procured. They must be short on the leg and small, for an otter in a natural holt—not a drain—will often get into a very small hole. And he is a most formidable beast to tackle, for, although at first he bolts readily, he is not always so easy to move after he has had a glimpse of the hounds and put back again into his stronghold. A good dog otter will weigh 24 lbs. (some have much exceeded that weight), and no terrier that is over 14 lbs. will be of much service, owing to his bulk. Thus in meeting an otter of this kind he is at a great disadvantage as to weight, while as to muscular strength there is no comparison between them, the otter being for its inches one of the most powerful animals living. Gameness, then, is most essential, yet not the gameness of the bulldog, but the courage of the true terrier that will lay at his otter, and keep his tongue going well while he harasses and drives him, without fear, yet without uselessly rushing into close quarters. With plenty of tongue, his whereabouts can be ascertained, and with the help of the spade assistance is soon at hand; while those listening can tell by the sound of his tongue the moment the otter moves, and though he makes his exit invisibly and under the water, where the terrier cannot follow him, there is no doubt about what happens when a good dog is at work, and the welcome cry of "Look out below" will soon be confirmed by a "Tally-ho" at the lower shallow.

Wire-haired fox-terriers, chosen for their shortness of leg, are most in use. They have power and activity to stand a long day's work with the hounds, and yet are able to get to ground in most places. Scotch or Highland terriers are very good, especially where they can be assisted by a wheeled conveyance, but they do not travel quite so well as the fox-terrier. Yet so many qualities are needed in the terriers, and they are so important a part of the pack that breed and appearance are often disregarded when the other requisites are found not to be lacking.

Otters—As regards the habits of the otter there is a great deal that is unknown, but still sufficient information has been arrived at by experts to enable the animal to be hunted with success. There has been much controversy as to the period of the year when the bitch lays down her cubs. The Hon. G. R. C. Hill frequently stated to the writer that they bred in any and in every month of the year, and that he had found cubs when hunting of such ages as to bear out this theory. We believe that it is, in the main, a correct one, but that the early months of the year, from January to April, see more cubs laid down than any other period. The litter generally consists of three or four—five is exceptional—and is laid down underground, generally in a "holt" or "hover" by the banks of the stream, under the roots of some ancient alder, with an access to it both under water and on dry land. For the first two months of their existence they will use this home alone, and the wanderings of the mother will only extend to such a distance as will enable her to provide food for herself and her family.

The injury that otters do to fishing interests is a good deal exaggerated. That they will kill good trout and small salmon is of course indisputable, but these swift fish are not by any means the chief staple of their diet. Coarse fish come more readily to hand, and thus are far more frequently taken. Eels are the most favoured food of all, and next to them perhaps frogs—especially for the young otters.

As soon as the young cubs can travel and have lost their milk teeth, they begin to fish for themselves, and deserting their old home, commence to lead the wandering life so characteristic of the otter. It has been asserted by more than one competent authority that the full-grown otter never, except when breeding, lies twice consecutively in the same bed. His habits are entirely nocturnal. Emerging from his holt at dusk, he will fish and travel over many miles of river, laying up at sunrise in some other regularly used holt many miles away. Oftentimes the hunter, unravelling the mazes of these nocturnal wanderings, is led by some tiny tributary up to and over the watershed, and commences his hunt by marking his otter in some river miles away from the stream he intended to hunt; and again the "drag" or "trail" will sometimes lead him to the seashore itself, along which the otter may have

travelled on his way to the mouth of some other river known to him.

In the famous trail hunt with Mr. Collier's hounds in the New Forest, which is recorded in the "Badminton" volume on hunting, the line led up to the source of the river on which the meet was held, over the water-shed, and down to another small river, along the course of which it was held for several miles; then, diverging on to a tributary stream, it followed the water nearly to its source, when the otter was found and almost instantly killed, lying above ground on the bed it had formed in the early morning hours old, there is nothing which can guide the hounds as to whether they are actually following their prey or taking a line "heel way," that is, leading them further and further apart. Fortunately there are in most streams regular landing places, adopted by reason of the force of the current—just as salmon always are to be found one after the other under the lee of some big stone—or by the slope of the bank, and with a little care it ought before long to be ascertainable whether the "seal" or footmark of the travelling otter points up or downwards.

Dress—As to the dress of the otter-hunter,

hours. The distance traversed by the hounds was fully twelve miles, the whole of which was upon the scent left by the night's wanderings of the animal pursued. The otter was a small bitch.

Hunting—From these details it will be seen that the chiefest part of the otter-hunter's task is that of finding his wandering quarry. Otters may be stumbled upon by chance by trying some well known holt or drain, but this is not otter-hunting. What has to be done is to strike the "trail" or "drag" of the midnight wanderer at some point on the river along which his travels extend, and then, having found the scent of his line, to unravel it until the hounds arrive at the actual spot where he is then couched. Obviously, it is no easy matter to determine whether the course followed by the hounds is the same as that taken by the otter, for, since the line of scent is one that is many

it should consist mainly of flannel; the colour varies with different hunts—with some the coat is scarlet, in others blue or green. The well-known costume of the Hawkstone Hunt, blue Welsh flannel coat and knickerbockers with scarlet cap, waistcoat and stockings, was perhaps the prettiest and most workmanlike of any. But whatever the colour, wool and all wool should be the material. Shoes carry less water about than boots; a stout pole about seven feet long is an invaluable assistance to serve as a leaping pole, to assist in crossing or standing in a rocky rapid stream, or to help its owner in scrambling up and down banks or over fences. They also come in very handily when an otter is floating and concealing itself "out of mark" in deep overhanging banks that touch the water, but are hollow underneath. The thrust of a pole anywhere near him will move and keep

him moving when nothing else succeeds. Poles are generally made of ash, but some of the best we have seen have been made of bamboo—especially male bamboo, and some very neat ones are made of the best of hazel shoots. All poles require to be properly shod with steel, and a spike at the end is needed to make the support a reliable one. Where very mountainous rocky streams are hunted, it is an excellent plan to have a V-shaped spike inserted, as it gives a far better hold on slippery rocks than the simple tip.

Spears—In former days a spear was used on the end of the pole, and the otter was killed at the first opportunity by this unsportsmanlike contrivance. The barbarous usage has now quite died out, and the otter-spear is to the modern otter-hunter a relic of the past like the chain armour or portcullis of his ancestors.

The Hunt—An early hour is usually chosen for otter hunting, partly because it is a sport belonging to the summer months, and one therefore to be followed before the extreme heat of the day sets in, partly also in order to obtain the scent of the otter's night travels when it is as fresh as possible. Yet so strong is this scent that hounds will run it freely many hours after the otter has passed—especially in damp water meadows, through lush grass, or in shady coverts under the shelter of such tussocks as are usually found in bogs. In places such as these the scent will lie nearly the whole day, but more in the open it dies away much sooner. Hence the earlier the hunter is afoot the more certain he is of being able to mark his otter. This is more particularly the case where pure foxhounds are used, for these hounds are not so good at hunting the drag as the otterhound, nor will they hunt so low a scent. But, as a rule, seven or eight o'clock is soon enough except in very hot weather, and in September or later August, when days are cooler, and there are heavy dews which lie long on the ground, we have seen days of excellent sport when the hounds did not meet till ten or even eleven o'clock. At times it is necessary to be afoot very early, as where an otter fishes up some stream where he can be hunted, but drops down in the early morning to some large river where his stronghold is impregnable, or into tidal waters where he vanishes altogether. In such cases as these, a good hunt may be obtained by meeting very early indeed at the junction of the two streams and by working up the smaller one. The otter may be cut off before he reaches the strong water, and so kept in the stream where it is possible to hunt him. No half measures will do in such matters—the pack must be at the fixture before daylight, and the master must throw off as soon as it is light enough to count his hounds. On approaching the river, a whipper-in or an active member of the hunt should get well in advance of the pack and keep there if he can do so; he will be very useful in checking such hounds as are riotous or inclined to get too far ahead. Moreover, directly the drag is struck he will be able to examine the various places where the otter lands, before the hounds get there and efface the "seal" which the otter has left. In this way he will be able to get early intelligence as to whether the otter was travelling up or downwards. Often the otter has worked both up and down, or there are two on the same stream travelling different ways, as for instance when a dog otter has journeyed a long way to find a bitch which has very likely come down the stream to meet him, and afterwards returned to her holt on the upper river, while he has dropped down to stronger water and security. In these cases there is nothing for it but to work on and trust to luck. It is a wise precaution to have a whip thus in advance on either side of the river. Sometimes the drag is so hot that the hounds will run clean away from whips, field and all, but of course as soon as they mark or find their otter they are readily overtaken. The danger, however, in these hot drags, and indeed at all times, is that of passing the otter, or running over or past the holt where he is laid up, and carrying the drag right through to its end, while the quarry is left behind. Not infrequently the otter will work a certain distance above and also below his holt—here the drag is as strong in one direction as in the other, and the river must be tried yard by yard to mark the holt. Again, it is the usual habit of the otter, when travelling up stream, to work the river for a little distance above the holt where he lays up, and then, dropping into the water, to float down to the resting place, leaving no scent by the way. Whether this proceeding is an ingenious artifice or is a mere accident suiting the convenience of the animal we cannot say, but it will be clear to the reader that the drag or line of the otter when once struck cannot, however hot it may lie, be relied upon to take the pack direct to the holt where the otter is laid up, without a little assistance from the huntsman and the service of his experience and knowledge. Especially in the case of a hot drag leading up stream will hounds be apt to pass the otter. They will race along the bank and bed of the stream at a great pace, tearing across the bends of the river on land and striking the line again and again as they drive upwards. The field pants eagerly after them, many a novice fearing that the otter will be found, hunted and killed before ever he gets to the spot. Gradually the pace moderates a little, though the scent is still hot in places. Old hounds hang back, or try the banks and are not so eager to "go to cry" as they were, when the line is struck further up stream. Slowly but surely the scent waxes cold, and at last all the hounds have checked and are out on the bank, each of the old ones trying to get back again to where they came from. The otter has

been passed—possibly some miles back. The day is no longer young, the first freshness is gone both from hounds and field, and the drag is foiled by the passage of the whole of the pack and the accompanying field with all their camp followers and attendant crew. Yet there is nothing for the huntsman to do but to retrace his steps ruefully, and with care and trouble to search out every yard of the river banks in the hope that there may yet be left scent enough for him to mark his otter and to find him after all. May luck attend him, for up to this point skill has failed him.

On the other hand, the careful otter-hunter and old hand, whose hounds first struck the drag and began to race ahead on it, would take careful note of the character of the stream he was hunting. Should there be open, level banks with no "holding" he may let his pack drive merrily and tunefully forwards. But if the stream be sinuous with many holts or coverts, it will not be long ere the notes of his horn signal to the whips, who are ahead of the pack (or by taking short cuts may get there), that the pack is to stop. Round they come to the master, who steadily holds them back down the stream, and along every yard of it that they have missed as they raced across the levels from bank to bank, till he knows for certain that not a place where an otter can lie has been missed by his hounds. It may seem to the stranger a peculiar and a slow proceeding to check hounds on a hot scent and cast them backward for no reason that he can perceive, but the old hand will thankfully hail the strategy and will well understand that never was time less wasted than that which is spent in making good, as he goes, every yard of stream, instead of leaving it to be done on the return journey. Especially where any tributary enters the river, or where the stream divides, will a cast backward be made. Often the otter has used both streams as he fished during the dark hours, and consequently the line may lead along both currents. One or other must be worked to its end, and, line or no line, a long cast up the tributary should be made lest the otter may have worked up the main stream for a short way and then, crossing the land, take to the tributary, on the lower part of which he has, of course, left no scent. When this has been worked out or made good, we may proceed up the main stream. Progress may seem slow with these irritating checks, but it will be much slower and less sure if all this has to be done on the return journey with a hot run and a cold scent. But if all goes well the drag will get hotter and hotter. The huntsman's care has assured us that it is hardly possible for our otter to be laid up behind us—and at last, at some old tree root or drain, we hear the welcome "mark" as the hounds bay and tear at the entrance to the holt. Yet all is not certain yet. Not a sound should be spoken as the huntsman keenly watches his hounds—it is by them and by his knowledge of them that the issue must be determined. Possibly the otter has only been there for a time, and may be lying yet further ahead. A hound that is a really reliable marker is worth his weight in gold. One or two such there should be in every pack. Many a hound will bay keenly at a holt where the scent of the otter is lying. So far he is right, but when a really good marker speaks, and if, after being drawn away with the pack to try further, he speaks again with decision on his return to the spot, there should be no more doubt. The otter himself is there, not the mere stale scent of his often-used lair. Once the mark is certain, the next task is that of bolting the otter, and here of course the terriers we have spoken of are indispensable. In the case of a drain, an opening far up in the field can be made, and the terrier introduced behind the otter. With deep water in front of him, he will generally bolt readily enough, but where an ancient tree root, washed hollow by successive floods, is the fortress, the matter is not so easy. If no hole can be found above water by which to introduce a terrier, an iron bar is very useful to sink holes here and there. If one of these penetrates into his subterranean galleries the otter will often bolt at once. Frequently he may be moved by a party of hunters jumping in unison on the top of the bank—their joint weight shakes the overhanging mass of earth and the otter will bolt as he feels it. And very often, where hounds have marked well at the door of his castle, he will move and show himself if they and the field are taken right away, and only a watcher left to report progress. This plan should always be tried in cases where the terriers cannot at once get to the otter and where long protracted digging seems likely to be required. During the progress of all these methods of attack, the nearest shallows or "stickles" must be manned, and a careful watch kept, lest the otter make his escape under water to some adjacent reach of the river and so on down stream, leaving no scent, till it becomes hopeless to hunt him. When he bolts it will be under water, for he has invariably a sub-aqueous access to his home, and, let there be never so many men and hounds all around his holt, the chances are that he will glide unperceived between their legs, and a "tally" from the shallow above or below will be the first intimation that their efforts to dislodge him have been successful.

When once the otter has stirred, a careful watch must be set at shallows both above and below, and through these lines of sentries the otter must not pass, at any rate unperceived. To many sportsmen this proceeding savours of mobbing and seems unfair. The answer is that without such a method the otter cannot be killed at all, and to forbid it is merely quixotic.

Of course, in small streams, there is no need to stop an otter anywhere, and the true sportsman will let him go where he likes, but even there he will find it essential to have sentries above and below to signal the departure of the otter from reach to reach, even though he is not to be interfered with. Although water carries scent to a certain extent and for a short time, it must never be forgotten that the scent flows downwards with the water, and is no criterion therefore of the direction taken by the animal which left it, or of his whereabouts at the time. Assistance therefore is necessary to the hounds, which are hunting, in an element foreign to their nature, an animal which is perfectly at home in it and has an immeasurable advantage of them. If then the water is at all deep or wide, with much holding on the banks, and there is no line of sentries above and below to confine the otter to a certain space, we can confidently say that the hounds may as well be taken home at once as allowed to weary and chill themselves by seeking to hunt an animal that can evade them by means of its native element just as it pleases.

Even with this assistance a good pack of hounds will find it hard enough to bring an old otter to book. Holt after holt he tries, and has to be re-found, marked, and dislodged either by the terriers or by other means. For a long period he will float, leaving only the tip of his nose above water. There is scent down the river in plenty, but the watchers of the ford will swear he has not passed them. At last a welcome "tally" shows his whereabouts, and the pack again get to close quarters. Finally, hotly pressed, he tries the land and makes his point to another reach full of stronger holding. After him fly the field—fresh fords must quickly be found and manned, and the hunt resumed with a fresh venue. But, tough as an otter may be, he cannot hold out for ever. His dives get shorter, he shows himself more often to the frantic crowd, and at last, as he makes a bold dash to force the guard holding the lower stickle, he is picked up or "tailed" by one of them, or the pack, catching a view, run into him ere he can regain deep water. Let them worry him all they can, they will make no hole in his skin, and those that were first to attack him will bear to their graves the marks of the gallant beast's last stand against them.

Hunting the otter varies much according to the county in which it is pursued. A chase in the rocky pools of Westmorland varies naturally from one in the water meadows of Hampshire, and there are intermediate scenes where hunts of widely different character may take place. Each has its charm—each its particular difficulties and need for special wood-craft. Yet speaking generally there is no more scientific, more arduous, and more "genuine" form of hunting—one more devoid of every suspicion of artificial treatment or cockneyism, or more worthy the attention of the true sportsman and lover of hounds, than the chase of this wiliest and toughest of British wild animals.

List of Packs of Otterhounds now Hunting in the United Kingdom.

Pack.	*Master.*	*Kennel.*
Brookfield (Cork)	Mr. T. Jennings	Brookfield, Co. Cork.
Buckley's, Mr. E.	Mr. E. Buckley	Mitford Hall, Newtown, N. Wales.
Bucks	Mr. W. F. Uthwatt	Great Linford, Newport Pagnell.
Carlisle	Mr. G. Mounsey Heysham	Canal Bank, Carlisle.
Cheriton's, Mr. W.	Mr. J. Cheriton	Ellicombe, South Molton Rd. Station, N. Devon.
Courtenay-Tracy's, Mr.	Mr. Courtenay-Tracy	Wilton, Salisbury.
Culmstock, The	Mr. F. Collier	Nicholashayne, Wellington, Somerset.
Cumberland, West	Mr. J. H. Jefferson	Little Mill, Cockermouth.
Dartmoor		Glazebrook, South Brent, S. Devon.
Dumfriesshire	Mr. D. J. Bell-Irving	Annan.
Hawkestone Otter Hunt	Mr. H. P. Wardell	Bromfield, Ludlow, Salop.
Kendal, The	Sir Henry Bromley	Dallam Tower, Milnthorpe.
Pembroke and Carmarthen	Mr. John Evans	Honeys Park, Milton, Pembroke.
The Rug	Hon. C. H. Wynn	Rug, Corwen, N. Wales.
Wilkinson's, Mr.	Mr. T. Wilkinson	Neasham Abbey, Darlington.
Ynysfor, The	Mr. John Jones	Ynysfor, Penrhyn, Dendraeth, Merionethshire.

Gerald Lascelles.

STAG—By staghunting we here imply the chase of the deer with a pack of hounds on horseback, or, as it was formerly called, "hunting at force," as distinguished from the earlier form of sport, in which the horse and hound were used only as subsidiary to the hunter's main object, which was either the killing of the deer with a weapon—a form of staghunting which dates back into the mists of Egyptian history—or, to quote a mediæval writer, one Christopher Ware, gentleman, "the forestalling him with nets and engines."

History of the Hunt—There is no doubt that hunting at force existed at a very early period in Britain, and it is difficult to trace its exact origin or account for its partial desuetude in the fifteenth and sixteenth centuries. William of Malmesbury states of Edward the Confessor that he delighted "to follow a pack of swift hounds in pursuit of game, and to cheer them with his voice"; upon the other hand, Mr. Hore, in his *History of the Buckhounds*, gives Edward III. the credit of being the first Plantagenet who rode to his hounds and thus hunted at force.

As the history of the royal hounds is to some extent the history of staghunting in this country, Mr. Burrows' interesting introduction to my own book may here be cited. From this we learn that the earliest record of a regular establishment of the buckhounds is the grant to Hamon le Venour in 1216 of certain lands in Rockingham Forest known under the Edwards as "Hunters' Manor," to which for many centuries the hereditary mastership of the royal

buckhounds was attached. The traces of this establishment, broken up on the permanent establishment of the Court at Windsor, are to be found in local names and ruins still existing in the woodland Pytchley country. These lands were held by the Lovels and De Borhuntes in consideration of their office, by the conditions of which they were bound to keep up a certain number (varying from fifteen to twenty-four) of liberal age, of which the mastership was to be held during the king's pleasure. The first master of the privy pack was the ill-fated George Boleyn, Viscount Rochford, who thus heads the rôle of Masters of the Buckhounds as we understand the office in these days. The two packs were jealous rivals; but eventually the hereditary mastership was sold by Sir L. Watson, a ruined cavalier, and the office became

A Meet.

"canes currentes" (buckhounds), two "berners" (keepers), a "veutrer" or huntsman, and whippers-in, partly at their own and partly at the royal expense. Towards the end of the fourteenth century, by the marriage of Sir Bernard Brocas with Mary De Borhunte, the hereditary mastership came into the Brocas family, who held it until 1633.

Under Henry VIII. a new institution—the privy Buckhounds—had arisen, more suited than the old feudal system to the ideas of that obsolete. So much for the past, now for the present.

The Deer Cart—Until evolution or some other process demolishes the proposition that the greater includes the less, precedence justly belongs to the deer cart. Without a deer cart there could clearly be no staghunting; but this solid engine of the chase claims our early attention upon higher grounds, inasmuch as the popular character of modern staghunting—in the widest sense of the word "popular";

Stag Hunting

witness, for instance, a turn-out at Salt Hill or Maidenhead Thicket—may largely be ascribed to its exciting influence.

In the course of my reading I have not been able to establish the date of the first deer cart, or discover its talented inventor. George III., however, acquired the freehold of Swinley paddocks in 1782 and started the hunting herd there about that time. Although deer may have been carted about previously to this for the royal chase, from that time onwards the deer cart may be said to have become the centre and pivot of modern staghunting.

A few words may be said here upon the causes which led to the introduction of the deer cart.

George III. at his own pace and convenience hunted the Berkshire side of the Thames and the Hampshire heathland very much in the same way as it is hunted now. He liked long runs, strong deer, the open country as against Windsor Great Park, and a field as against a court.

The deer cart and artificially conditioned deer were the only means to these ends. But the new system, as a system, was an innovation, not a revolution. Owing partly to the countless Enclosure Acts of the two previous reigns, the spread of agriculture, and the growing taste for high farming and reclamation, the area of staghunting in the environs of Windsor and all over the country was rapidly disappearing. As a matter of fact the red deer had long ceased to be the first "beast of venery" in England.

We should have to go back several hundred years to find in this country any such "astonishing extent" of forest as Colonel Thornton remarks upon in his sporting tour to France in 1805. Parks and fallow deer abounded in the year 1530. According to Manwood there were upwards of a hundred parks in the counties of Essex and Kent alone; and the best French writers upon venery of the sixteenth and early seventeenth centuries (an Augustan period of this sort of literature) held English staghunters in doubtful esteem, because their experience was limited to parks, and to fallow buck hunting as against staghunting.

In short, by the end of the last century, setting aside the gaunt and unvisited Highlands of Scotland, wild herds of red deer were only to be found upon Exmoor and Dartmoor, in the New Forest and in Wolmer Forest.[1]

It is true that a Swinley deer is recorded as having afforded a record run into Oxfordshire to the Duke of York and his suite. but I question whether this was a wild deer in the Exmoor sense of the word "wild." The red deer, saving the stately remnant who still enjoy the high privileges and ancient distinction of their race on Exmoor, has no such abiding city in England as he appears to hold and to keep in France. But perhaps whatever the "tall deer" may have lost in prescription he has gained in popularity. Upon the "greatest happiness" principle the carted deer may be congratulated upon rendering services to his generations which would have delighted Bentham, and upon playing a part, especially in the Ascot and Windsor districts, which merits the attention of the economist and the gratitude of the Inland Revenue.

[1] *Vide Rural Sports*, Rev. J. Daniel (1805); and for a description of the Wolmer deer, White's *Selborne*.

The deer cart in use at the royal kennels, which, as the result of a century's experience, may be taken as typical of the species, consists of a rectangular wooden van on four wheels, giving the interior dimensions of 5 feet 9 inches by 3 feet 4 inches and 4 feet 1 inch high. There is a longitudinal division made in two parts and to slide, which divides the cart into two compartments, each compartment having a door. When the deer are carted in the morning,

Deer Cart.

this sliding partition is so arranged as to allow the first deer to enter on the left and turn past the inner end of the partition into the right-hand compartment. The deer thus faces the right-hand wing of the double door in readiness for the turn-out. The second deer remains in the left-hand compartment in case the first does not afford a good run. The floor of the deer cart should be 3 feet 3 inches from the ground, and battened to prevent slipping; it should never be scrubbed, but merely brushed out, leaving some manure in order to improve the scent for hunting. The double doors are ventilated in the upper part on the Venetian blind principle, with two windows near the top that the deer may not be dazzled when first freed. The interior walls are padded and covered with strong cocoanut matting. Under the driving box is a place for lame hounds, 2 feet 2 inches × 3 feet 4 inches × 2 feet 6 inches. A deer cart of this type, and all of the best, costs about £120.

The best is the cheapest, for a deer cart has

to stand exposure to much wind and weather and the wear and tear of all sorts of country roads. Initial solidity is an essential, and unfortunately solidity means weight. The approximate weight of the Ascot van, which has been in use since 1874, with its freight of two men and two deer, is about 23 cwts., which involves a strain of something like 16 cwts. upon the horses.

In these resourceful days it seems strange that something less cumbersome has not been discovered: pending the invention of a motor deer van, any suggestion for lightening the burden should be welcome. Mr. Kemsley, of the Royal Hotel, Ascot, who has horsed and driven the deer cart by contract for some years past, to whom I am indebted for the foregoing particulars, advises as an improvement the use of a cranked axle, which would lower the body six inches and render the van more practical for loading: and he would add higher front wheels and closer couplings, and make the body six inches shorter. This would materially decrease the weight. It has always seemed to me that a further lightening might possibly be effected by the substitution of a strong wicker roof, instead of the present wooden one, made waterproof by a covering of strong tarpaulin, on the principle and in the style of that important factor in every day life, the lady's travelling dress trunk.

Mr. Kemsley tells me that he reckons the average day's journey at forty miles. I know, speaking from my own experience, that this is within the mark. But an instance occurred last season when seventy miles had to be covered by the deer cart, which got back to the paddocks at about three in the morning. Mr. Kemsley reserves four horses solely for this work, each pair doing one journey a week. He likes a short-legged horse with plenty of bone, not over 15.3 and not under seven years. They must be well seasoned and fairly bred, in order to stand the long miles and face the weight.

The master of a pack of staghounds is exempt from the cares of earth stopping, but the efficiency and staunchness of the deer cart are heavy items in his budget and serious considerations.

Let us glance for a moment at some of these considerations: a well-horsed deer cart can even on woolly roads manage a steady six or seven miles an hour. As most staghounds do not meet till twelve, a very early start is seldom necessary. At the meet the deer van attracts as much attention as the Trojan horse might; upon its being driven into the field selected for the turn-out, popular enthusiasm knows no bounds, the excitement being kept up by conflicting suggestions as to the position it should occupy and several elaborate changes of front. But after the uncarting, the deer cart repairs to some central point. Among free-born Englishmen this always means a public-house—and here we come to a question of morals. The well-ordered number of these bulwarks of civilisation, coupled with long hours, stress of weather, agreeable company and personal popularity, mean that the driver and his comrade must unite the self-discipline of a St. Simeon Stylites to the hardihood of a Nansen.

"They also serve who only stand and wait"—in the circumstances a difficult thing to do without a glass of beer; but it is not all waiting. Possibly the first deer is taken or disgraces himself in half an hour, and the second deer is quickly wanted. A messenger arrives on the spur, and the deer van is expected to exhibit all the dash and alacrity of a London fire engine in getting to the scene of action. If, on the other hand, no orders have arrived by the time agreed upon, the whole caravan gets under its ponderous way, and follows to the best of its ability the line of hounds: depending upon the reckless information of passers-by or the vague accounts of discouraged sportsmen who have lost a shoe, lamed their horses, or had enough of it. This may go on for hours, and it will be admitted that a good deer cart driver is a valuable servant. The safe carting of the deer, its comfort in transit, and the soundness and welfare of the horses depend upon his care and competence. In a well-managed establishment the driver should always have a man with him who should be a good stableman, and if possible accustomed to the ways of deer.

Unless your men, your horses and your deer cart are all of the best, recognise their responsibilities and work harmoniously together, your troubles will not be to seek.

It may here be remarked that the van-driver and his comrade should be suitably but not too soberly dressed. The green plush coats and gold lace of the Royal Hunt give the deer cart a very classical appearance. In Utopia, I think, these officials would wear heavily furred white beavers, and a gaily attired postillion might be added. But in any case the rather prison-van-like appearance of the conveyance should be relieved somehow by colour and character.

The Carted Deer—The managing partner of a staghunting company next claims my attention.

Successful staghunting, by which a staghunter means a good run, in which little or nothing is seen of the deer, until he is taken safely and artistically, depends upon several things.

There is the mood and temperament of the deer; there is the weather, for though deer run well in under bright skies and a hot spring sun, I have seldom seen them run up to their form in muggy hazy weather; there is the country, that is the line taken by the deer, a matter of prime importance in such a riding pastime as staghunting. But, with the exception of the

weather, all these largely depend upon the deer's condition—condition in the sense we mean when we speak of a Persimmon or a Slavin being trained to a day. In the case of a deer this training is the test and result of the paddock management. It will be good or bad in the same ratio as this is good or bad.

The number of deer in the paddocks depends upon purse, space, and the number of days a week the pack hunts. The hardest running deer are always the soundest, and very seldom get themselves into any trouble. Thus a crack deer will come out six or seven times in an open season; but three days a season is the most you can reckon upon with an average animal, and to hunt a two-days-a-week country properly, *i.e.*, assuming two deer are taken out daily, this may be taken as the basis of calculation.

At Swinley, the Royal Deer Paddocks, things were done on a liberal scale, but it is much better to have rather too many than rather too few deer. Deer easily get stale; like human beings, they have their days, and to my mind it is both foolish and wrong to hunt a weak or unwilling deer. The whole *raison d'être* of staghunting is the run. Thus a deer should not and must not be hunted as we hunt a fox. To press home even legitimate advantages with a deer involves the risk of bewildering him or even killing him. In the former case your run is spoiled and your field is disappointed. In the latter you are guilty of the cardinal sin of staghunting. Thus the most difficult thing for persons in authority out staghunting is to determine when to stop hounds and when to press a deer. It is a matter of intuition, with a dash of luck.

As the Swinley Paddocks are the oldest existing establishment of their kind, I cannot do better than give the following details of their disposition, for which I am indebted to Mr. F. Simmonds, of the Woods and Forests Department.

The Swinley Paddocks occupy an area of about 12 acres, divided into five separate paddocks, averaging rather over 2 acres each. The whole is fenced with an oak fence standing 8 feet out of the ground, of which the upper 3 feet are open palisade, and the rest close paling; at the point where these two parts meet, an iron sheet about 3 inches wide is laid along the fence; and at the bottom of the fence an iron ground sheet is let about 9 inches into the ground; the average cost of this (including banking) is £3 12*s.* 6*d.* per rod. The paddocks are treated as permanent pasture and never meadowed, a certain acreage being manured, harrowed, and rolled every year, and the deer are shifted about from one paddock to another, according to circumstances. This extra manuring and manual labour are necessary, in order to prevent the herbage going back, for deer are wasteful feeders, and will only graze the very best herbage, leaving the rougher parts untouched. If anything, the Swinley Paddocks are a little over shut in by trees, but shade and water are essential. At Swinley the latter is supplied from a stream flowing out of a neighbouring pond, small bays being made for its reception and storage.

In the Paddocks.

The present Swinley herd consists of stags, hinds and haviers, and one or two polled haviers. As the difference between a havier and a polled havier is not always understood even by staghunters, it may here be pointed out that a polled havier never throws any horns, having been castrated very soon after he is dropped—whereas a havier is a stag castrated when full grown and at his best—that is, from four to seven years old. A havier's horns will grow again almost as usual the first spring after the operation. They are then taken off

again, and after that velvet will grow on the brow antlers, but a havier never grows a head again. The hunting career of a stag should not begin before he is four years old.

A deer taken up into paddocks, say in September, if wanted for that season, should be at least four years old, and should not be hunted much before Christmas.

It is difficult to say whether stags, haviers or hinds afford the best sport. The great long-distance runs on record have almost invariably been after stags or haviers; but towards the end of the season, when the country dries up, hinds run the roads less than stags or haviers. One of the best deer I had in my time with the Queen's Hounds was a lop-eared polled havier.

The deer selected for hunting should be taken up into a deer stable on the afternoon of the preceding day, and should fare lightly. As soon as possible after he is taken he should be given some forage and water. The food of paddock deer of course largely depends on the time of year. During the summer they can and should live almost entirely upon grass. In the autumn and winter the average diet for a single deer may be taken as about a quart of the very best old beans and about one-fifth of a truss of second-crop clover hay daily, according to the weather and their keep in the paddocks. This menu is varied occasionally with carrots and pulped swedes or turnips, to the amount of, say, one-third of a bushel per day. Care should be taken to secure the best quality of forage. Given plenty of space and favourable conditions of every day life, there seems no reason why deer should not be bred in the paddocks for hunting purposes, but it has never been tried on any large scale to my knowledge. If at all lame, owing to road work and flints, the feet of a hunted deer require careful attention, and an experienced deer-keeper will have a liniment of his own, prepared from some recipe which wild horses would not induce him to divulge. It takes about four men to throw and examine a deer safely.

As a rule a deer tells you all about himself the first time you hunt him in an open country; but as staghunting is a pursuit peculiarly uncongenial to rules and formulas, he should always be given a second or even a third chance of winning the affection of the establishment and the esteem of the public. I have known instances of capital runs after very poor and even ridiculous starts. You never know what deer are going to do; they will run up and down the first fence, stand in the corner of a field looking at you, trot back down a road to meet the pack, or even pursue its quick retreat, and then all of a sudden settle down to run you out of daylight, or into the next county but one.

The best deer run to points, and I think concern themselves little about wind, although they are said to prefer to run on a side wind; but it is as well to uncart them with their heads up wind, and give them plenty of time to make up their mind. In some well-managed packs of staghounds it is customary for the first whip to ride the deer for a few hundred yards, with the object of edging him into the right country.

This was the plan of the celebrated Charles Davis, who held it desirable to point his deer on turning him out towards a conspicuous hill. As an example of this habit of running to points, the "Druid" relates of the Miller, a noted stag in Davis' time, that if he got two or three hundred yards out of his old line, he would take the greatest pains to right himself, and would then set-to in earnest. In one instance in my recollection, the polled havier I have just commended was left out after a 12-mile point. He was harboured in a big wood of Lord Downshire's; we found him a fortnight later, and he ran the last six or seven miles almost gap for gap on his old line the reverse way, being taken in an outhouse in the next field to the one in which he had been originally turned out.

The "Take"—It is related of the fifth Duke of Richmond that he was quite afraid to meet a certain butcher when he had not killed his fox. The butcher would never accept any excuses nor admit the possibility of a good run without blood. But it is just the other way staghunting. A master of staghounds who has killed his deer, keeps it to himself, if he does not wish to advertise his incompetence. In this connection it was remarked with justice by an apologist of the last century that whereas in every other kind of hunting everybody strives to be in at the death, out staghunting the exertion of all is to save the deer's life. This then is the grand test of a huntsman's skill and success: season after season old names and old friends in the paddocks.

To my mind the artificial conditions and high feeding of paddock life are not alone sufficient to put a deer in wind for the deep and holding country over which he is often hunted. Deer should therefore be exercised. As an example of how this may be done, I may say that in the Swinley Paddocks we formerly had a bob-tailed lurcher to whom this duty was confided. He performed it admirably. The deer and he thoroughly understood each other, and nothing would have induced him to turn into earnest the play which both parties thoroughly enjoyed. It is only fair to say, however, that the contrary opinion is held by many who are conversant with the subject as to the desirableness of this artificial exercise.

The "Druid," in one of his books, endeavours to point a distinction between the hunting aptitudes of different breeds of deer, the Woburn deer, for instance, being superior

to the Chillingham, and so on. In my opinion, the question is not so much one of strain, which has little bearing on the question of a deer running well or ill, as of local antecedent conditions. It is a great point that the deer destined for hunting should have been bred in large, rough parks, where they have had plenty of range and wild life.

Country—I spoke just now of country as a condition of successful staghunting. In my opinion the prime requisites are extent and variety. From the riding point of view—a very material one—nothing can be imagined better than the Elysian fields of the Aylesbury Vale and the emerald provinces of the Ward Union. At the same time, if only some magician could do away with the wire, restore the Harrow country, obliterate many villas and an occasional village, and, perhaps, whilst he was in the humour, abolish the Thames, the Queen's county would be an ideal staghunting county. There is country of all kinds, and, above all, lots of room, and the value of the bold sweep of forest and heath lands cannot be over-rated. Staghounds should not meet in a systematically wired country, and they should always be stopped in water meadows or low-lying riverside lands. The best mounted and most resolute hunt servants cannot be counted upon to keep with hounds in these circumstances.

"The Lord of the Valley stands proudly to bay."

Like every other line of Whyte Melville's appreciative verses, this is absolutely true. Besides, habit is ten times nature, and the pack are so accustomed to bay round their deer in a lusty "Freischütz" chorus, but at a respectful distance, that so long as he is on his legs, it does not occur to them to do anything else. But the carrier of a water meadow, or the ooze of a withy bed, has a fatal attraction for deer, which they seem powerless to resist; they seem to abandon themselves to a sort of Nirvana. With the loss of the advantage of ground, there is the more serious loss of prestige,—and then it is soon all over.

The Staghound—The Rev. J. Daniel and other writers of authority in the first years of this century speak with disparagement of the slowness and heavy outline of the royal staghound. But a very few years after the publication of Mr. Daniel's *Rural Sports* in 1806, the old staghound type was extinct, at all events in the royal kennel. Both George IV.'s and Lord Derby's staghounds were pure bred foxhounds, and the good ground gained in the first quarter of the century has been more than held.

Nothing could be more different from the old Georgian staghound or the Massy buckhounds —a celebrated pack of curiously bred Talbots in Tipperary—than the type a Master of the Buckhounds or of the Ward Union sets before him and works up to to-day. Horses and men want to go faster and faster, and so must the hounds. Moreover, nothing is to be gained by the majestic size and massive bulk still honourably associated with these Vieille Roche aristocrats. A racing foxhound pack of the highest breeding—24 ins. at the very outside, 23 ins., in my opinion, is better—with the Blankney necks and shoulders, above all with the tirelessness which Lord Henry Bentinck and Mr. Tom Smith set such store by, are what the present conceptions of hunting and of riding to hounds require. To some extent, too, a staghound's is a thankless service; *bon sang ne peut mentir*, and only a foxhound of high degree will go on doing his very best in the face of the moral, and often practical, rebuffs which are his only meed when once it becomes a question of a deer's safety.

As the tendency of staghounds is to string, and as the drive and speed of your hounds are

HUNTSMAN AND HOUNDS.

the first things to think about, a pack should be drafted hard up to high standards of pace and dash. In a pack of twelve couple—quite enough, in my opinion, to have out with a large field of eager and courageous horsemen—every hound should be fast enough to get to the front and determined enough to do his utmost to stay there. Nose is hardly the first consideration in a staghound, for, as Charles Davis used to say, the scent of a deer lies so high and sweet. It may be an impossible ideal, but a master of staghounds should not rest content till, in Beckford's phrase, he sees his hounds topping their fences "like the horses of the sun, all abreast," or, to quote another high authority, "spreading like a rocket," in a difficulty.

It is difficult to establish the exact origin of the old staghound, bred, as he was, with care and patience for the express purpose of staghunting. Perhaps the old Devon and Somerset pack, rather than George III.'s hounds, may be taken as the best of the sort. In height they ran from 26 to 28 ins.; in colour they were

hare and badger pied, yellow and white, and black and white with long ears, colossal throats, deep chests and slab sides. Even when running hard, these hounds gave plenty of sonorous music; comparative silence is the price we have had to pay for pace. But a modern staghunter on a grass-country horse, with the Vale of Aylesbury unfolding itself in front of him, will cheerfully bear the loss of the melodious operations of the past.

Horses—Little need be said with regard to horses. The best is not too good for staghunting; "thoroughbred horses make the best hunters; I never heard of a great thing yet but it was done by a thoroughbred horse," said Dick Christian. I believe he was quite right, especially for staghunting. Dick Christian goes on to say that he likes them with lots of action and to see all four feet at once. It is not very clear what this means, though it gives one an almost uncomfortable idea of action; but in buying a staghunter bear in mind that road work, and fast road work, is inevitable, and that a noisy hackney-actioned horse knocks his legs to pieces in no time. Send him a quarter of a mile away, listen to him gallop down a road towards you, and if he recalls to you Virgil's hexameter, don't buy him. Of course a staghunter must go fast. A slow or underbred horse, if not outpaced by staghounds, soon gets blown by the persistence of the pace; for if the deer is really in the humour, a horse has few opportunities for getting his wind, and it is but seldom his rider can save him by riding cunning and getting a nick. In view of the long hours and the ever lengthening miles home, which stout deer usually mean, it is an economy to send out two horses for all the hunt servants; thus you want more horses than you would in a foxhunting stable. Unfortunately, too, the second horses do not often mean any great saving to the first. They can seldom get to points or make short cuts; and when they do arrive, have had to come along a pretty good pace and jump a few fences. Three days a fortnight is quite as much as a hunt horse can manage, and even then he must be seasoned, full of condition, and fairly ridden. But, given these desiderata and a capable stud groom, the effect of the most severe day's staghunting soon passes off.

It may here be remarked that the whippers-in should be quite as well mounted as the huntsmen, and on really bold horses. They should be "emergency" horsemen; by this I mean men who will jump a really big place at a critical moment.

The Past and Present of Staghunting—Since 1857, the first year the *Field* published its annual list of hunting establishments in the United Kingdom, the number of staghunting packs has steadily increased from six to sixteen in 1897, the highest figure recorded in this period. I have not got the figures for Ireland. But it is not an industry which has suffered from over production, and this increase bears no proportion to the remarkable increase of foxhunting establishments. As exhibited and practised by the Queen's, the Surrey, Lord Rothschild's, and other well-known packs, staghunting has never been more popular than at present; yet it continues to be, as it always has been, a localised form of the chase. For all but a century there have been staghounds in the home counties, in Hampshire and in Norfolk; but, as far as

I know, this sport has never taken root in the midland and northern counties; and whilst there are several packs of high reputation in Ireland, staghunting has made no way either in Scotland or in Wales.

As a good deal has been urged at one time or another to the depreciation of staghunting as compared with foxhunting, I may be excused for briefly noticing here some of the advantages which our good-humoured and democratic pastime affords. It is claimed, for example, that staghunting lacks much of the uncertainty which certainly distinguishes fox- and hare-hunting; but this very feature is in itself from some aspects commendable. To begin with, unless the deer cart has got lost, you are sure to find; and there is always scent enough to hunt a deer when hounds could not own to a fox. Then there are conditions attached to staghunting which make it an eminently suitable amusement and exercise for busy men who like a ride. Several of the most notable staghound packs are, thanks to our benevolent railways, within easy reach of London. In a good country, with a fast pack and a straight deer, a run of an hour, or at the most an hour and a half, should satisfy most people. Staghounds meet late, and nine times out of ten the best of the run is over early. Then we trouble ourselves less about conventions than foxhunters. If anything, staghunting is too liberal a school of morals; there are no canons of dress, and very few of behaviour. Lastly, from a master's point of view, our profession is absolved from many of the anxieties which take up a good deal of the time of a master of foxhounds. Your master of staghounds is spared, for example, all heart searchings as to the soundness of Mr. Jones' views on foxes; he need not upset all his arrangements owing to Lord Hawkeye's big shoot, or answer letters about massacres of poultry and game. If only he can keep his field in order—who are as a rule not good judges of seeds and meadow land—the damage done to land by staghounds should compare favourably with that caused by foxhounds in a fashionable country; a good deer runs over a long stretch of country, he runs straight, and does not, if he is worth his salt, dodge and twist about, like a bad fox on a poor scenting day, dragging a large and impatient field backwards and forwards over a few hundred acres of affectionately farmed land. If he does, a wise master leaves him to his own devices, and sends for the deer cart and the second deer.

Ethics naturally bring us to a freely debated aspect of staghunting, the humanitarian. A discussion of the "cruelty" question would be outside the scope of this article; besides, I have said all I have to say in the chapter on this subject in my *Staghunting Recollections*. Perhaps a rather closer acquaintance with our manners and customs may mitigate the asperities of our opponents; and if my book should have any such effect I should indeed be pleased; but on the broad issue I would recommend to their notice the discussion between Mr. Fox and Mr. Wakefield (the editor of *Lucretius*), given in Lord John Russell's *Memorials and Correspondence of Charles James Fox* (Vol. IV.), and in the words of Mr. Wakefield, "I wish that any dispute of the kind would terminate as amicably and after such gentle litigation" as theirs did.

Literature—The literature of carted deer hunting, though adequate, is not large: Mr. Beckford declined to include us in his *Thoughts*, Mr. Daniel only just admits it to his *Rural Sports*. "Nimrod" touches upon our pastime with occasional condescension, but his heart is far from us. In Scott and Sebright the "Druid" devotes a vivid chapter to the staghunting of his own and the preceding generation. Then we can see a fine run with the Baron in the pages of *Satanella*, and laugh at ourselves with the late Mr. Higgins in the Harrow country (*Wild Sports of Middlesex*), or with Mr. Surtees and John Leech when the Benicia Boy electrifies Miss Birch's establishment. Starting from Edward III., Mr. Hore in his *History of the Royal Buckhounds* traces the fortunes and investigates the budgets of the royal pack under successive sovereigns. Of my own book I will only say that its facts, experiences and recollections are the result of three years' close association with deer, staghounds, and staghunting.

RIBBLESDALE.

LIST OF PACKS.

1857.

Her Majesty's.	Devon and Somerset.	
East Berks.	Heathcote's.	
Cheltenham.	Baron Rothschild's.	6

1862.

Her Majesty's.	Mr. Heathcote's.	
Burton Constable.	Hon. F. Petre's.	
Devon and Somerset.	Baron Rothschild's.	6

1865.

Her Majesty's.	Mr. Nevill's (Winchester, given up).	
Sir C. Constable's (Yorks).	Hon. F. Petre's (now the Essex).	
Devon and Somerset.	Baron Rothschild's.	7
Mr. Heathcote's (now the Surrey).		

1871.

Same as above, except Sir C. Constable dropped out; but two new names appeared—the Easingwold in Yorks and the Berkhampstead in Herts. 8

1875.

Her Majesty's.	Hon. F. Petre's.	
Mr. Angerstein's.	Baron Rothschild's.	
Berkhampstead.	Surrey.	
Colchester.	Mr. Farnell Watson's.	
Devon and Somerset.	Waveney (Norfolk).	
Easingwold.	Lord Wolverton's (Dorset)	
Mr. Nevill's.		13

1880.

Her Majesty's.	Mid Kent.
Berkhampstead.	Norfolk and Suffolk.
Lord Carrington's.	Hon. F. Petre's.
Colline Dale. (He bought Lord Wolverton's and Mr. Nevill's.)	Sir N. de Rothschild's.
Devon and Somerset.	Surrey.
	Mr. Farnell Watson's. 11

1885.

Her Majesty's.	Hon. F. Petre's.
Berkhampstead.	Sir N. de Rothschild's.
Devon and Somerset.	Surrey.
Lady Meux's (Wilts).	Warnham.
Mid Kent.	4th Hussars.
New Forest.	11

1891.

Her Majesty's.	Lord Rothschild's.
Berkhampstead.	Surrey.
Devon and Somerset.	Surrey Farmers'.
Enfield Chase.	Warnham.
Essex (late Petre's).	8th Hussars. This is a regimental pack at Norwich, and the hunt is transferred from regiment to regiment. 14
Mr. Giles's (Herefordshire).	
Mr. Greene's (Suffolk).	
Mid Kent.	
New Forest.	

1895.

Her Majesty's.	New.
Berkhampstead.	Oxenholme.
Devon and Somerset.	Lord Rothschild's.
Enfield Chase.	Savernake.
Essex.	Surrey.
Hon. R. Gerard.	West Surrey (Farmers').
Mr. Greene's.	Warnham.
Mid Kent.	7th Dragoon Guards. 16

WILD RED DEER ON EXMOOR—If any one branch of hunting can be said to be especially popular with the readers of sporting magazines and other periodicals of the present day, surely that department of sport with which the Devon and Somerset Staghounds are associated may lay undisputed claim to the distinction. Yet the hunt has had its days of adversity, and many staunch supporters thereof, who have not yet left their middle age behind them, can well remember the days when the future of the chase of the wild red deer seemed more than doubtful.

Turning first to the **History of the Hunt**, it seems probable that deer were first hunted by the rangers of the forest of Exmoor from a very early date, apparently the thirteenth century, but it was not until 1775 that a pack of hounds was hunted there by a private gentleman. From that time to 1818 the hunt was prosperously carried on by various magnates of the district; then until 1825 the sport would seem to have languished, and from Vol. XV. of the *Sporting Magazine*, published in that year, it is obvious that the "North Devon" Stag Hunt was in a moribund state. In the volume above referred to is included a lengthy article by "Nimrod," which appeared in the November number, 1826, and describes the experiences of the author on a sporting tour in the West. His description of the hound is of interest, "the North Devon hounds appear to be, with one or two exceptions, thorough-bred staghounds, having all the peculiarities of the breed. They are heavy—or perhaps I should say strong—in their shoulders; short in their necks; slack in their loins; rather deep-flewed; heads long; ears fine and pendulous; noses somewhat flat and wide; tongues deep and sonorous; very good legs and feet; and from 24 to 26 inches high. The prevailing colours are yellow, badger, and harepie—not one black and white hound among them. They carry their heads high with a good scent, but will stoop to a low one; and are all line-hunters—a flinging stag-hound being seldom met with."

Nimrod, however, does not seem to have seen any sport on the occasion of his visit, and the heavy rains which prevailed were little to his taste.

In the February number, 1825, there is a piteous letter on the subject of the decline of the hunt, which, the writer avers, had received its death-warrant; and, in fact, at the end of that season the hounds were sold by auction in London to a German baron.

From 1825 to 1855 there was more than one interregnum, but in the latter year began a new era, on Mr. Fenwick Bisset coming forward as Master of the pack. How that gentleman faced difficulties of every kind unflinchingly, and how, thanks to his efforts, the sport has prospered, all interested in the annals of the Chase must know. He retired from the Mastership after twenty-six seasons of good sport, and his successors have all maintained the standard of excellence to which the management of the Hunt had been brought.

Literature of the Sport—Following this brief summary of the history of the "Devon and Somerset Staghounds," allusion must be made to two works, in which the seeker for information on this subject will find ample matter of interest; though it must be mentioned that both books are comparatively rare. The first of these is Dr. C. P. Collyns' *Notes on the Chase of the Wild Red Deer*, published in 1862. It deals very fully with the sport which the writer loved so well, and consists of eight chapters, besides an appendix of upwards of 80 pages "descriptive of remarkable runs and incidents connected with the Chase from the year 1780 to the year 1860." The book is, moreover, profusely illustrated and contains a map of the district.

The second work is entitled *Records of Stag-Hunting on Exmoor*, by the Hon. John Fortescue, published in 1887, and contains many illustrations, besides a map of the stag-hunting country, the extent of which is described in the opening chapter. Three appendices are subjoined, in which are to be found a "Record of the most notable Chases from 1855 to 1885," and a "Tabulated History of

the North Devon and Devon and Somerset Staghounds," which is followed by a list of the ear-marked stags killed between 1855 and 1885.

Though the above two volumes stand out as those in which the best of information is given by writers well qualified for their task, there was published in 1849 a book entitled *Exmoor; or the Footsteps of St. Hubert in the West*, by Herbert Byng Hall, Esq., with illustrations which, however, can hardly be said to deal entirely with sporting subjects, nor indeed is the book itself confined to Exmoor. Mr. Hall's work is not easily obtained, but there are accounts in it of several runs which are of interest.

As for the Red Deer, in Dr. Collyns' book the noble beast of the forest is fully described in Chapters II. and III.: the author cites Manwood to show cause why the hart and the hind are both mentioned as beasts of forest in the book *Antiquitatis Britanniæ*, which dates from before the Conquest. Even at that early date "the hart hath his season in summer, and the season of the hart doth end." The reader is then inducted into the distinguishing names of deer at different ages; since Dr. Collyns' day some of the more purely technical terms of distinction have fallen out of use; *e.g.*, one does not hear a deer in his third year called a "spire or pricket," or a four year old a "staggart,"—nowadays they are generally called "three" or "four year olds," whilst a "knobber, or knobbler, or brocket" is called a "male deer" simply. Similarly, the term of "hearst" for a hind in a second year is seldom used. To continue observations on Chapter II. of Dr. Collyns' book, his notes on the size and character of stags' horns at various ages are not to be surpassed; it is a topic on which unanimity of opinion cannot always be expected, but the age of the stag can, as a rule, be distinguished up to a certain point, when the stag's head is said to be "going back" or—as Dr. Collyns called a deer in such a state—a "bater" or "backer." The deer in the Devon and Somerset country do not differ from the Scotch deer in any respect; the size of "beam" is generally a question of the quality of food accessible.

The author of the *Chase of the Wild Red Deer* is, in the matter of enthusiasm for the noble beast of venerie, hard pressed by one Richard Blome, to whom we are indebted for the *Gentleman's Recreation* published in 1686, in which the modern sportsman will find much instruction and not a little amusement. The book was intended, it appears, to be a general storehouse of sporting knowledge in its widest sense. Amongst "Profits and Advantages of the Stag," one learns that "the Horns are said to be Antidotes against Poyson, being little inferiour to those of the Unicorn, if there be any such Beast." But the sportsman and lover of Nature will read, perhaps, with greatest pleasure Richard Jefferies' *Red Deer*, the first edition of which work was published in 1884. Though a born naturalist, the author, when he first visited Exmoor, knew little or nothing about hunting, but it must be admitted that, during the short time that he was collecting materials for this book, he learnt his woodcraft with marvellous thoroughness. If Dr. Collyns' book is hard to obtain, this cannot be said of Jefferies' *Red Deer*, for an excellent edition of it is obtainable at a small price. In its ten chapters there are many passages descriptive of the beauties of red-deer land, whilst from a sporting point of view Chapter VI., on "Tracking Deer by Slot" or "Harbouring," is most instructive.

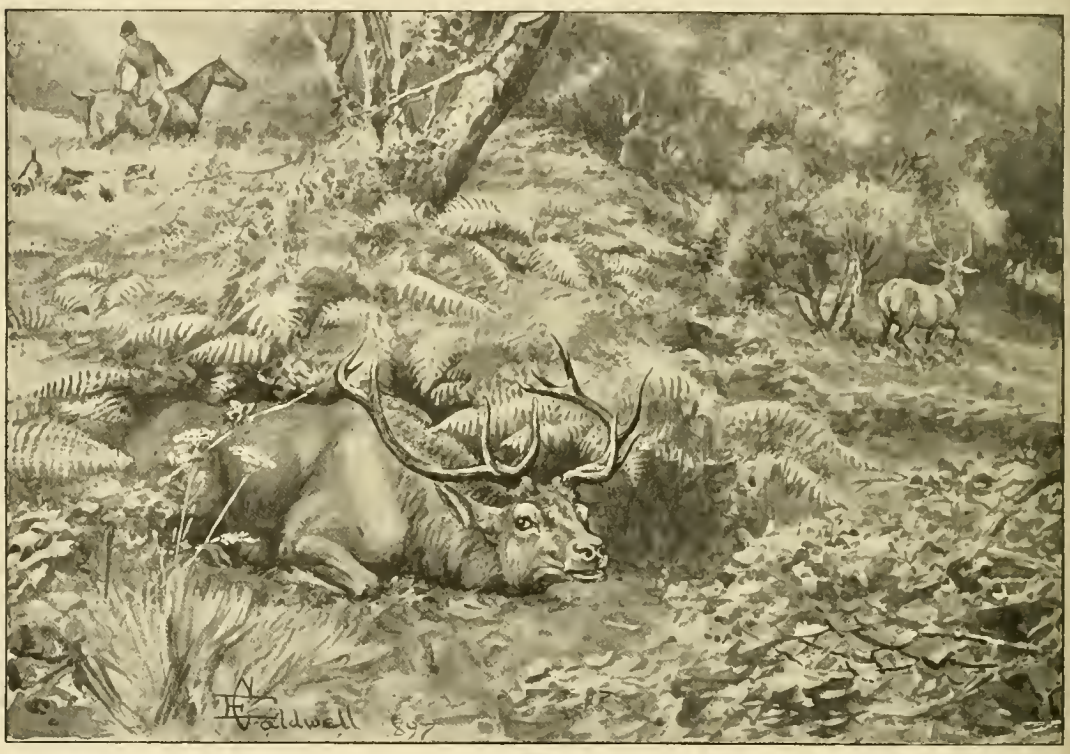
Harbouring—This branch of venerie is probably so familiar (in print) nowadays that it seems almost superfluous to write down that it is the duty of the "harbourer" to report at the meet of the staghounds where a "warrantable" stag, *i.e.*, one over four years old, has made his bed or lair. To ascertain this, the "harbourer's" movements are guided by the "slot" or foot-print, which varies with the age of the deer in size, length and shape; the greatest care being exercised by the harbourer during his investigations not to disturb the deer, who are particularly shy in the early hours.

Hunting—Arrived at the meet, the Master directs the huntsman to kennel the pack in any farm buildings, &c., that may be convenient, and the huntsman forthwith starts off with a few hounds (the number varying according to the place where the stag is reported to be lying) to rouse the deer. These hounds or "tufters" seldom exceed in number four couples; that they should have good tongue is most necessary, though, if a stag is lying out on the moor, a couple or so of particularly fast hounds may be selected. This tufting is frequently a long process; the deer may have moved after the harbourer has duly satisfied himself as to his work being done, and many untoward accidents may bring this about.

Then, with the deer fairly found by the tufters, hinds, or young deer, may distract hounds' attention; indeed, a cunning old stag will do his best to put up other deer. But as a rule the patience and experience of his pursuers will be too much for him in the end, and he is forced to fly. The first opportunity is seized for stopping the tufters, and the field, most of which is waiting at the farm where the pack is kennelled, is set in commotion by the sound of the horn, giving the signal that the time has come for the "lay on." Though it may be half an hour or more before the pack is brought to the spot where the tufters have been stopped, the scent of the deer generally serves well enough, and to the lover of hounds at work perhaps laying on the pack is the prettiest sight of the day's hunting, for there

is a crash of music and hounds "drive" along. This drive does not often last for long; the deer leaves behind so good a scent that hounds do not fling for it as they would after a fox, and they settle in their places, striding along at a good pace nevertheless. So the chase goes on; if the deer is a very heavy one, and he has been found near the sea, it will not take long to drive him down the cliffs, and he will swim out into the Bristol Channel; thence to be brought back by boatmen, and despatched on the beach. It is more often in the rivers and streams that abound in the district that the finish of the run takes place, the stag standing to bay in the water; when once he has been brought to bay, he fights for his life, and should a beaten stag break from bay, and jump into a road full of horses, the riders lose no time in dispersing, for he would stop at nothing in his desperate case. In some streams it is occasionally a matter of considerable difficulty to give the stag the *coup de grâce*, and he will run up and down the water until he can be lassoed, or seized by the horns from behind. It is not often that a stag is killed on dry land, though a notable case was that of the gallant stag killed on October 9th, 1889; he was found in the Bratton coverts sixteen miles from Luckham, where the kill took place, but instead of being brought to bay in the Horner Water, he still ran on, and finally jumped the high wall that surrounds the rectory garden, hounds rolling him over on the lawn. Cases such as this are dangerous; and this is evidently the opinion of the aforesaid Richard Blome, whose advice "as to the Land Bay" is "If the Hart be frayed and burnished then the place is well to be considered of; for if it be in a Hedge side or thicket, then whilst he is stareing on the Hounds you may come covertly amongst the bushes behind him and so kill him, but if you miss and he turn Head upon you it is convenient to take refuge behind some tree."

The excellence of this advice is beyond dispute; other words of counsel from the same source of authority, perhaps more rarely acted upon, tell us that "it hapneth very often that through some accident or other the Hart escapeth. Now for the recovering of the Chase the next day let there be some Mark set where the Chase is left off."



A Cunning Old Stag.

The Deer Country—As to the nature of the country over which the red deer are suffered to roam unmolested save by hounds, their territory is bounded on the north by the Bristol Channel, fringed with steep cliffs and strong woodlands for the most part as far as Minehead; east of this, the country lies lower and consequently is more enclosed until the range of Quantock Hills is reached. These heather-clad hills, and the large coverts that surround them, abound in deer, and, as this district lies wide of the Exford kennels, the hounds are

kennelled at Bagborough for a week or fortnight at a time when the Quantocks are to be hunted. Some distance west of this are the Brendon Hills and the Haddon Woods, which afford shelter to deer galore. To the south of Haddon Hill and Skilgate Common runs the Devon and Somerset Railway, beyond which the territory of the staghounds does not extend, though recently the liberality of a gentleman and the sporting instincts of the inhabitants have led to an auxiliary pack being formed to hunt the deer south of the line. Close to Dulverton the river Exe is joined by the Barle, and both these rivers, the latter especially, run for miles down deeply wooded valleys. The part of the country in this district that is free from woods is strongly enclosed, though on Winsford Hill and its environing commons good galloping ground is frequently to be met with. West again of the Barle valley, Anstey and Molland commons stretch away to the Molland Woods, whilst some distance further west come the Bray coverts; the latter, with the Bratton Woods, though immediately surrounded by a rather impracticable country, are generally reckoned as most likely to provide a good deer that will boldly face the moor. When Yard Down is the meet, a stag will often set his head straight for Moles Chamber and the Forest, perhaps not touching another covert until the Horner woodlands, on the north-eastern extremity of the moor, are reached. Similarly, from a fixture at Friendship Inn, a Bratton deer worthy of the name climbs the ascent to Chapman's Barrows, and affords a fine run to the same fastnesses, should he have strength to reach them. Exmoor Forest itself, *i.e.*, the Simonsbath side of the moor, is almost free from heather; sedge grass here prevails, and in many parts the moor is intersected with narrow drains, which, being covered with thick grass in the stag-hunting season, are responsible for many an empty saddle. The commons of Brendon, Badgworthy, and practically all the moors east of the Badgworthy Water, are covered thickly with heather: over these moors the riding is good enough. On the Forest side the going is soft, in places very much so, and the dictum of a well-known deer preserver and follower of the hounds that there is no such thing on Exmoor as a bog has not met with universal assent.

Season—The staghunting season begins about August 10th, Cloutsham being always the fixture, followed a few days later by Hawkcombe Head; both these meets are in the Porlock or northern district. For the former meet, the Horner Woods, composed principally of oak scrub, may be relied upon to furnish a warrantable deer; Hawkcombe Head is more likely to mean a moorland gallop, though with so many coverts adjoining the rendezvous the starting point of the run from this fixture depends on circumstances.

The stag-hunting season usually comes to an end about the 10th of October, after which the hind-hunting season commences, and is continued until the end of April, that is, when the deer are plentiful, as is now the case. Towards the end of September a visible change comes over the male deer, for the rutting season is approaching; the stags' necks begin to swell, and they "bell" in search of the hinds. In the old days an interval was usual between the stag-hunting and the hind-hunting, but nowadays the vast area over which the large herd of deer are hunted makes any prolonged cessation of duty on the part of the Devon and Somerset Hunt establishment impossible. Thus the season for hounds and horses is a long one. Hind-hunting is productive of more hard days than the chase of the stag, for a hind will generally stand before hounds for three hours or more, and much trouble is caused if the pack gets among a herd of deer. The hind-hunting meets are not often very largely attended.

Hounds—The Devon and Somerset hounds are out, as a rule, three days a week, and the arduous nature and duration of their work are a severe strain on them; perhaps what tries hounds more than anything is the work that they have to do in the water; and hounds drafted from the Exford kennels often turn out to be valuable otter hounds. The pack is entirely composed of dog-hounds, and the average height is 25 inches; owing to the wear and tear of the kennel being heavy, a large entry is annually put on, consisting of hounds drafted from fox-hound kennels owing to their height. The very best of blood is to be found —and those to whom a good-looking hound is an attraction much appreciate an inspection of the Devon and Somerset kennels.

The hunting experiences of Dr. Johnson are reported to have led him to aver that "the dogs had less sagacity than he could have prevailed upon himself to suppose," and "that it was very strange and very melancholy that the paucity of human pleasures should persuade us to call hunting one of them."

But as we gather from the biographer who mentions these *obiter dicta* that the great man's observations on the chase were solely derived from the Brighton Downs, it may be suggested that after a few days with the Devon and Somerset Staghounds he might have qualified these aspersions on the Sport of Kings.

L. J. BATHURST.

GLOSSARY—FOX.

Away—(Of a fox), left the covert.

Babbler—A noisy hound; one which gives tongue when not on to line.

Bagman—A fox released when required; the term had its origin in the practice of some owners of estates allowing their keepers to kill foxes, and then to buy one when hounds were expected. He was commonly taken to the covert in a sack, and shaken out.

Balk—Of a horse, to refuse a leap.

Billet—The droppings of the fox.

Blank—A covert is blank or drawn blank when it holds no fox.

Blooding—Giving the fox to the hounds.

Breast-high—*See* SCENT.

Brush—The tail of the fox.

Bullfinch—A hedge too high to leap; riders have to bore through it.

Burning scent—*See* SCENT.

Burst—The first part of the run if the hounds get away close to their fox.

Burst him—(Of a fox) killed in the burst.

Carries—Of the ground, when it sticks to the fox's pads after frost.

Carry a good head—Of the hounds, to run and keep well together on a good scent.

Cast—To spread out, in search of the scent. Hounds either cast themselves or are cast by the huntsman.

Catch hold—A huntsman is said to do this when he, at a check, takes his hounds forward, either to a holloa or for some reason of his own.

Challenge—The first hound which speaks on hitting off the line "challenges."

Change—To leave the line of one fox for another.

Check—An interruption to the run, the scent being lost—**thrown-out.**

Chopped—Killed as soon as found.

Counter—To follow the scent from the fox, instead of following him.

Covert—A place where the fox is sheltered, whether wood, thicket, or gorse, &c. Such places have various local names, such as holts, roughs, coppices, or copses, spinneys, shaws, &c. Artificial coverts are often planted, gorse, laurel, withies, hawthorn, &c., being used. Temporary coverts are also made of dead wood and bushes, and are called stick, faggot, or dead coverts.

Covert-hack—A horse used for riding to the place of meeting.

Covert-hoick—The huntsman's cry, meaning "into cover."

Covert-lad—*See* PAD-GROOM.

Crash—When the pack all give tongue together on finding a fox.

Crop—The whip used in hunting, with a loop, called a keeper, at the top of the crop for the attachment of the thong.

Cub—The young of the fox.

Cub-hunting—Takes place before fox-hunting begins, and generally early in the morning. Its principal object is to train the hounds and teach cubs to go away at once.

Currant-jelly—The scent of a hare crossing that of the fox, and disturbing the hounds.

Dog-fox—The male fox.

Double—To turn back on one's course.

Draft—To remove hounds from a kennel, or pack.

Drag—(1) The scent left by the fox on his return to his lair. (2) An artificial scent, followed by drag-hounds.

Drag up to—To follow the scent of a fox up to his kennel.

Drain—Any underground passage for water, to which the fox may run.

Draw,—Draw a covert—To search for a fox in a covert.

Draw blank—An unsuccessful draw.

Dwelling—Not responding to the huntsman's call; lingering too long on the line.

Earth—The lair or burrow of the fox.

Earth-stopper—A person employed to stop earths. It is done while the fox is abroad at night, and on his return he finds himself stopped out. All earths are stopped in the district in which hounds are expected to be on any hunting day.

Enter—Young hounds when first put into the pack are said to be "entered."

Eye to hounds—The art of watching the leading hounds, and so following them by the shortest line.

Feathering—Moving the stern from side to side, an act which indicates that the hound recognises the scent, but not to a sufficient extent to speak to it.

Feeder—He is really the kennel cook. He prepares the meat and meal for the hounds and washes out the kennels.

Flash—(Of hounds), to overrun the scent.

Flighty—Uncertain and changeable, applied both to hound and scent.

Fling—To drive on the scent at the least semblance of a check.

Foil,—Foils—To run. To run over the same track.

Foiled—A term applied to ground which has been much traversed by hounds and horses.

Fox—*Canis vulpes*, order Carnivora. The object of Fox-hunting. It is said there were two varieties of fox in this country, the greyhound and the bull-dog; the latter distinguished by its wider head and darker colour; but they have almost disappeared since about 1830, being supplanted by the French fox, which is smaller than either, and of reddish hue.

Full cry—Originally alluding to the chorus of music from the pack, is now understood to mean the hounds going fast on a good scent.

Gone away—Left the covert.

Gone to Ground—Gone to a drain, earth, rabbit-hole, or other shelter underground.

Headed—(Of the fox), made to turn back.

Headed to death—Killed unfairly, when headed.

Heel—*See* SCENT.

Hold hard—The warning to riders not to press too closely on the hounds.

Hold them forrard—To take the hounds on, in search of a lost line.

Holding scent—*See* SCENT.

Hunt foil—Run foil.

Huntsman—The person who hunts the hounds. The Master (M.F.H.) frequently assumes this office, and then the official who feeds the hounds and sees after them generally in kennel is called the kennel huntsman. The first whipper-in usually discharges this duty.

Kennel—(1) The fox's lair. (2) The old word used for the hounds; now "Pack," formerly confined to harriers, is often used.

Kennels—The place where the hounds are kept.

Kennel huntsman—*See* HUNTSMAN.

Lift—To take the hounds from a lost scent, with a view to hitting the line further on.

Line hunter—A hound which keeps close to the scent.

Main earth—The fox's own lair and breeding place.

Mask—The fox's head. Also PATE.

Meet—The rendezvous of those about to take part in the chase.

M.F.H.—Master of Fox Hounds.

Mob—To surround and kill a fox, without giving him the chance of a run.

Mute—Silent, the hounds going too fast to speak. Some hounds are naturally mute.

Noisy—Speaking without a scent.

Over it—*See* SCENT.

Owning—*See* SCENT.

Oxer,—Ox-fence,—Ox-rail—A strong hedge with a wide ditch, and a single rail about one yard in front of it. A double oxer has a rail on each side.

Pack—The hounds employed in hunting. [*See* KENNEL.]

Pad—The foot of the fox.

Pad-groom—The groom who rides the hunter to cover, and brings back the hack. Also COVERT-LAD.

Pate—The fox's head. Also MASK.

Pink—The scarlet coat worn by fox-hunters.

Point-to-point—A straight run. Most hunts now have point-to-point races during the season. The course is not flagged, and the competitors take their own line.

Point-rider—One who does not ride as the fox and hounds go, but to points at which he hopes to pick up the hounds.

Rabbit-earth—A burrow, to which a fox often goes for shelter.

Rack—A way through a hedge.

Recovered—*See* SCENT.

Ringing-fox—One that runs in circles instead of going right away.

Roach-back—A round-backed hound.

Road-hunter—A hound which possesses the rare gift of being able to hunt a fox or hare on a road.

Riot—*See* RUN.

Run—(1) The chase of the fox from finding to the death. To run counter, foil, or heel [*see* COUNTER, &c.]. To run to earth [*see* EARTH]. To run to ground [*see* GROUND]. To run riot: to follow a wrong scent.

Scent—The odour given off by the fox, by which he is found and followed by the hounds. It is *burning*, if very good or strong; *breast-high*, if so good that the hounds do not stoop to it; *moving*, if it is so *fresh* that it must be recent, and not a *drag* (*q.v.*); *flighty* or *catchy*, if variable; *holding*, if good enough, but not very strong; *recovered*, if lost, and found again. When hounds speak on a scent, they *own* to it; when they go beyond it, they are *over* it; when they follow it the reverse way, it is *heel*, *counter*, or *foil* [*see* RUN]; when they remain on it without following it, they *dwell* on it; when they first perceive it, they *feel* it, or *hit* it, and *hit it off* when it has been lost; if they hunt any other animal than that which is their proper game, they *run riot*; when they lose it, they *throw-up* (*i.e.*, their heads).

Scoring—Hounds "score" when the whole pack speak to a strong scent.

Sinking—(Of a fox), nearly beaten.

Skirter—A hound which runs wide of the pack.

Speak—Of a hound, to cry, showing he is on the scent.

Spout—Rabbit-earth (*q.v.*).

Stained—Injured as regards scent by the previous passage of hounds, horses, or of cattle, &c.

Stern—The tail of a hound.

Stooping—(Of hounds), putting their noses to the ground. [*See* SCENT.] A hound is said to stoop to a scent when he has once taken to speaking to it.

Streaming—Going across open country, spread out.

Stub-bred,—Stump-bred—Foxes which, in certain districts, make their lairs in bushes or stumps instead of underground; stubbed was the old term.

Tailing—Hounds are said to tail when they run in almost Indian file. To tail is the opposite of carrying a good head.

Throw off—To start the hunt by putting the hounds into a covert.

Throw up—*See* SCENT.

Thrown-out—Checked. [*See* CHECK.]

Timber—A wooden fence, rail, stile, or gate.

View halloo—The cry when the fox is seen.

Vixen—The female fox.

Ware riot—The cry to the hounds, when running riot (*q.v.*).

Well clawed,—Well knit up—With strong claws, adapted for running.

Whelp—A very young puppy.

Whipper-in—The huntsman's help in controlling the hounds.

Worried—Killed by the hounds.

OTTER.

Bolt—To put the otter out of his holt or couch.

Chain—The series of air-bubbles sent by the otter to the surface of the water when he breathes during his dives.

Couch—[*See* HOLT].

Drag—The scent left by an otter, by which he is hunted up to.

Foil—(1) Used of spectators or huntsmen: to spoil the scent by disturbing the ground. (2) Used of the otter: to return on its own track.

Gaze—To view the otter.

Holt—The lair of the otter, and the various refuges to which he flies when pursued, or when driven from home by rising floods. It is a burrow excavated in the bank, generally overshadowed by a bush or tree, with an entrance beneath the water. There is generally also a *Vent-hole* of small size above water level, at which the otter may be winded. Other names for holt are *Couch*, *Hover*, *Kennel*, and *Lodge*.

Some authorities prefer to use "couch" and "kennel" for the permanent home, and "holt" and "hover" only for the temporary refuge.

Hover—[*See* HOLT].

Kennel—[*See* HOLT].

Litter—A family of young otters varying from three to five in number, and very occasionally six. They are generally brought forth in spring or early summer.

Lodges—[*See* HOLT].

Look below—The man stationed at the shallow beneath the pool where an otter is found in order to turn him back should he attempt to pass, or at any rate to give notice of his departure.

Otter—*Lutra vulgaris* or *Mustela lutra* (*Linnæus*). The otter is a member of the family *Mustelidæ*, to which belong the weasels, stoats, pole cats, martens, &c. It has beautiful fur of a brownish-grey colour covering the whole body. The limbs are short and provided with webbed feet; the tail is long and powerful, gradually tapering to a point.

The usual length of the body is about 2 feet, and of the tail about 15 or 16 inches. The male weighs from 18 to 26 lbs., the female from 13 to 22 lbs. upon the average, but one dog otter was caught in a net measuring 4 feet 10 inches, and weighing 40 lbs.

The otter is not only an extremely expert swimmer and diver, but can run swiftly overland, often escaping hounds in this way.

Otterhounds—The Otterhound is a perfectly pure and ancient breed of rough hound. Foxhounds are also used for otter hunting.

Otter-pole—The pole which most sportsmen use to assist them in wading and climbing banks, &c.

Put the Otter down—To drive him from his holt.

Seal—The track of the otter upon the bank; easily recognised by the mark of the five toes, the ball in the centre of the foot, and the absence of a heel.

Shoal—Verb: to drive the otter down to the shallows.

Spur—Rarely used for *Seal* (*q.v.*).

Spraint—The excrement of the otter; also called *Wedging*.

Stickle—West country term for a shallow.

Trail—[*See* DRAG].

Unkennel—To dislodge the otter from his holt.

Vent—(1) Of the otter: to come up to the surface to breathe; (2) the spot at which the otter comes up for air.

Vent-hole—The upper surface of the *Holt* (*q.v.*)

Wedging—[*See* SPRAINT].

STAG.

Antler—Originally the first branch of a deer's horns; now used for any of the branches or tines, and even for the whole growth of horn. *See* BROW, BAY, and TRAY.

Backer—A deer that has passed maturity, and has begun to diminish in size of body and horn as old age comes on. Also called BATER.

Bay—(1) The second tine or branch upon a deer's horns, counting from the head upwards. Also called BEY.

(2) The stag is "at bay" when he turns to face the hounds, either too much exhausted to run further, or having found a strong position of defence. The hounds in their turn are said to "bay" or "bring to bay" a deer in such a position.

Beam—The main stem of a deer's horns from which the branches proceed.

Bell—The challenge of the stag during the rutting season.

Blanch—To head, *i.e.*, turn the hunted deer from making his point.

Break soil—*See* SOIL.

Brocket—A two-year-old stag; also called *Knobber* or *Knobbler*. (Several of the old terms for deer at various ages are now never used.)

Brow—The lowest and forward projecting branch of a deer's horns.

Burr—The rounded swelling at the base of a deer's horns, just above the skull. Also called the CORONET.

Calf—A red deer of either sex in its first year.

Coronet—*See* BURR.

Crockets—The points upon the top of a deer's horns.

Foil—The trail of the pursued game.

Fraying stock—The stump of wood or stone which the stags use to rub off the *velvet* (*q.v.*) from their horns.

Harbour—(1) of the deer; to take up a settled abode in some covert.

(2) Of the harbourer; to track the deer to its favourite covert, and to make sure that it remains there.

Harling—The old Devonshire practice of taking a pack to covert roped together in couples.

Havier—A castrated deer.

Hearst—A two-year-old hind.

Hind—The female of the red deer.

Hoop-headed—Epithet of a deer whose horns, in place of spreading, tend to come together at the top.

Knobber. *See* BROCKET.

Layer—The spot at which the deer intended for pursuit couched over night.

Lay on—To put a pack upon the trail of a stag after the tufters have driven him from cover.

Mewing—Old term for the shedding of a deer's horns.

Nott—Of stags; hornless.

Pearls—The bony swellings that form a ring around the burr (*q. v.*) of a deer's horns.

Pricket—A three-year old stag. Also called SPIRE.

Rack—A gap in a hedge or fence through which a deer has passed.

Rights—The "rights" of a stag are his brow, bay, and tray antlers.

Rouse—To put a deer out of cover.

Run-up—A deer is said to be "run-up" when exhausted by the chase.

Set up—Of the hounds; to bring the deer to bay.

Single—The tail of the red deer.

Slot—(1) The footmark of the deer. (2) The foot itself. (3) Verb; to trace a deer by his footprints.

Soil—Of the deer; to take to water. Hence the place to which he goes is called his soiling place, or shortly, his "soil." When he leaves it he is said to "break soil."

Spire—*See* PRICKET.

Staggart—A stag in his fourth year.

Take—The successful conclusion of a run is always called the "take," whether the deer be killed or not.

Tine—A branch of the antlers.

Tray—The third projecting branch of a deer's horns, counting upwards from the head.

Tufters—Selected and steady hounds put into covert in order to separate the deer intended for pursuit from the rest of the herd, and to put him out from cover.

Velvet—The network of arteries that covers and nourishes the growing horns. It is extremely tender, and bleeds freely if touched.

Warrantable stag—A stag fit for hunting, *i.e.*, in his fifth year or upwards.

Yeld—Of the hind; barren.

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HUNTING DOG—The Cape hunting dog (*Lycaon pictus*), the *Wilde Hond* of the Boers, stands slightly under two feet at the shoulder, drooping somewhat at the quarters, and has an extreme length—from snout to tip of tail—of about four feet or a trifle over. The body is slight, the muzzle pointed, while the skull is like that of a wolf, but shorter and wider. The general body colour is yellowish red, blotched with irregular markings of black, white, and yellow. The face, nose, and muzzle are black; the ears large and erect. The tail is bushy and foxlike, separated towards the middle by a black ring. Above this ring the colour is yellowish, below white. The hunting dog runs in packs, ranging in number between a dozen and forty or fifty. It possesses great pace and staying power, and few antelopes in Africa can stand before the savage and relentless pursuit of these fierce and dangerous animals. The packs hunt in a systematic and organised manner, often driving their prey in a circle, so that relays of fresh hounds take up the pursuit. Mr. F. C. Selous has witnessed a single Cape hunting dog running down, single-handed, so strong and formidable an animal as the sable antelope. In the actual chase, the hounds, as they press their game, dash forward in turn and take snaps at the flank and under parts of the beast pursued. These animals are plentiful in many parts of the interior. In Cape Colony and the more settled regions of South Africa packs of hunting dogs,

although being gradually exterminated, still exist and do enormous damage to flocks. Numbers of sheep and goats are destroyed in a single night by these dangerous marauders. On these occasions the hunting dogs, apparently from the mere savage delight of slaughter, rip and tear far more than the number of animals required for their supply of food. The hunting dog seems to have little fear of man. I have seen a pack in the interior, while in full chase after a koodoo, suddenly stop at sight of our hunting wagons and coolly indulge in a prolonged stare, after which they took up the pursuit again. Gordon Cumming, while shooting by night at a pool of water, once sustained a great fright from a large pack of these wild hounds, and had some difficulty in driving them off.

H. A. Bryden.

HYÆNA—There are three species of true hyænas: the **striped hyæna** (*H. striata*), found in India, South-western Asia, and the North and East of Africa; the **spotted hyæna** (*H. crocuta*), found only in South Africa; and the **brown hyæna** (*H. brunnea*), which is, perhaps, commonest in South Africa, but is known northward in Angola on the west, and as far as Kilimanjaro on the east of the continent. Another animal, not distantly connected with the hyænas, is the curious **Aard-wolf** of the Cape Dutch colonists, known to scientists as *Proteles cristatus*. This singular animal looks like a small striped hyæna, but has a more pointed nose and longer ears, five toes instead fo four upon the fore feet, while its teeth are, compared with those of the other hyænas, singularly poor and feeble. The aard-wolf has the honour of being set apart as a family unto itself, called by naturalists *Proteleidæ*. Hyænas are always miscalled wolves by the Boers of South Africa; the spotted hyæna being known as the "tiger-wolf," its pied coat resembling distantly that of the leopard, always called "tiger" by the Cape Dutch; the brown hyæna is called "strand-wolf," from its supposed partiality for the sea-shore; while the aard-wolf, "earth-wolf," takes its colonial name from its burrowing propensities.

All the true hyænas are fierce and ravenous, yet extremely cowardly brutes. They are essentially nocturnal beasts, and seldom or never have the hardihood to face mankind boldly and openly. The most formidable is undoubtedly the spotted hyæna of South Africa, the largest of the true hyænas, which will carry off young children, and in remote native districts even attacks sleeping adults. Not a few natives of South Africa have lost a cheek, or some other fleshy part of their person, from the cowardly nocturnal assault of a "tiger-wolf," made upon them while asleep in the open, or even in an unclosed hut. Where these ravenous brutes have not been killed off, their devastations upon flocks and herds are very great. Sheep and goats fall a ready prey to them, and they will easily master calves, and even cows and weak or ailing cattle. The teeth of all three of the true hyænas are immensely powerful, and with their highly-developed jaw muscles enable them to crack and devour bones that would offer great difficulties to any others of the Carnivora. The spotted hyæna stands some 2 feet 6 inches to 2 feet 8 inches at the shoulder; the striped and brown hyænas are rather less in size. The skins of the true hyænas are, from the carrion-eating propensities of the animals, usually very malodorous and are little sought after.

The coat of the aard-wolf is, however, very handsome, and not very offensive. In colour it is of a yellowish-brown, neatly marked with black stripes, and having a thick mane and bushy tail. This animal is trapped and hunted for its skin a good deal by the Bechuana natives, and the pelt is often to be seen at traders' stores up country. The aard-wolf

Spotted Hyæna.

Measurements—Length from head to tip of tail, 5 ft. Weight of adult, 74 lbs.

is a good deal smaller than its congeners the true hyænas, and resembles somewhat a large, leggy, and high-shouldered fox—if such a beast could be imagined. The aard-wolf feeds occasionally on carrion, but the contents of its stomach indicate that more often than not its dietary consists of white ants, grubs, and other insects. The appetite of the true hyænas is well-nigh immeasurable. Like the vultures they gorge at a dead carcase until they can literally fill themselves no more, and a spotted hyæna, shot at early morning, as it is retiring from its disgusting banquet, will be found to be almost bursting with repletion. Against any animal that they can master, hyænas are murderously savage, and the poor beast, whether sheep, calf, goat, cow, or antelope, is torn to pieces and devoured with marvellous celerity.

In Cape Colony the spotted and brown hyænas have been shot, trapped, and poisoned

off by the farmers until few now remain. Beyond the Orange River, however, they are, with the aard-wolf, still abundant in many places. It cannot be said that any of these creatures are good sporting animals; their habits are too nocturnal, and only at very early morning, when retreating to their earths and resting-places, do they offer a fair shot to the rifle. The Cape Colonists, long since recognising these difficulties, have achieved the downfall of the spotted and brown hyænas largely by aid of strychnine pills inserted into dead carcases. The "tiger-wolf," too, with his tremendous jaws and teeth, is a formidable beast for any but the very largest and fiercest dogs to tackle. The up country Boers used occasionally to capture one of these brutes in log traps, slit the hind legs just above the hocks, and insert between the sinew and bone an iron chain. Thus fastened up, the hyæna was suffered to break his teeth in the vain attempt to gnaw through his fetters. He was then considered a fit subject for the dogs to bait and kill. This extremely cruel sport was supposed among the old-fashioned Boers to be a capital training for young hounds.

In the hunting veldt, hyænas are often extremely troublesome round the camp at night. One of the simplest and most effective ways of dealing with them—known as the gun trap, or *stell* of the Dutch farmers—is still commonly practised. A loaded gun is firmly lashed in a horizontal position, at about the height of the hyæna's head, to two stout saplings, or strong poles, driven into the ground. A short piece of wood, which acts as lever, is tied to the side of the gun stock in such a way as to move slightly backwards and forwards. A piece of string connects the trigger with the lower part of the lever. Another piece of strong cord is then fastened to the upper part of the lever, the other end being firmly tied to a large piece of flesh secured over the muzzle of the gun. A small fence round the gun is then made, with an aperture in front, so that the hyæna can only seize the meat while facing the muzzle of the gun. Drags or trails of flesh or carrion, conducting to the trap, are then usually laid. If the affair comes off successfully, the hyæna seizes the bait, pulls the trigger, and the contents of the gun are lodged in its skull, or the head itself is blown to pieces.

It is a curious fact that the young of hyænas, if taken quite in infancy, can be so tamed as to become attached to human beings. Thus tamed, they will even make friends with dogs, usually their inveterate enemies.

H. A. Bryden.

SOMALILAND—The spotted hyæna of Somaliland is not hunted systematically, but it is killed as vermin whenever met. There are generally a dozen or so about each kraal; they prowl about at night outside the zeribas, or thorn fences, within which the sheep and goats are penned at night. They carry off children, and often molest men and women while asleep, generally attacking the face, and tearing off the cheek. Many are the Somali men and women to be seen with their faces horribly disfigured, without eyes or nose, the work of the Waràba, or spotted hyæna. They tear off cows' udders and camels' tails. Half a dozen of them will attack and kill a haltered camel in a few minutes. Old people are occasionally killed by hyænas.

Round the sportsman's camp they are nightly visitors, attracted by the scraps of meat scattered about; and I have, at different times, shot in all some two dozen from the tent door, and several while I was watching over water. On one occasion, at a well, I found the bodies of seven spotted hyænas, killed by natives by the simple expedient of putting poison in one of the troughs of puddled clay which stand at the mouth of every well where water is left after the cattle have drunk. The wells are deep and difficult to climb into, and wild animals often have to drink from these troughs left by the herdsmen.

The spotted hyæna of Somaliland, which is commoner there than the striped variety, should give a glorious run in suitable country, for they are very numerous round Berbera, Bulhar and Zeyla on the Somali Coast, and at Harar, when cholera was raging about 1892, they were said to come in thousands at sunset to drag away the dead bodies of the victims.

The cry of the spotted hyæna is a peculiarly mournful howl—a long drawn note ending with a high one, or two low notes with a high one in the middle. When breaking up a carcase, the hyæna emits curious low chuckles.

Striped hyænas are not often shot in Somaliland; they live more in the bush, and do not prowl so much round the kraals; they are also rarer. The skin of this variety is often very handsome, with a bushy tail.

There is no difficulty in shooting either kind of hyæna, and there is very little sport in it; but the spotted variety affords the very best practice in night-shooting. My own custom was to paste a long strip of white paper down the rib of the rifle, and, when shooting at night, to take a quick aim with the muzzle slightly raised, then to lower it, and pull the trigger as the white line disappeared from view. So fired, the rifle carries high, and the eyes should be fixed about six inches below the object at short range.

H. G. C. Swayne.

INDIA—The only variety in India is the striped (*Hyæna striata*). It is somewhat smaller than the African spotted variety, but appears bigger owing to the large mane or crest which hangs over on either side of the neck to a little below the withers. Its appearance is ungainly,

as its front legs are higher than the hind, the stripes, resembling the hoops of a barrel, extending downwards on to the legs.

It stands about 2 feet 6 inches at the shoulder, and is about 5 feet 8 inches in length, including the tail, which is about 15 inches long and bushy, the snout moderately long but blunt. It has immensely powerful jaws, and can crack even a horse's thigh-bone with ease. The great longitudinal ridge on the top of the skull is far larger than even in the lion or tiger, and to this ridge are attached the great cheek muscles which close the jaw. The large grinding teeth have great conical crowns, the base of the cone being belted by a strong ridge which defends the subjacent gum, but the canines are proportionally smaller than in the felidæ, and the outermost incisor—that nearest the canine—is much larger than in the cats. The total number of teeth is thirty-four.

It is a cowardly animal as a rule, but occa-

STRIPED HYÆNA.

Measurements—Max. length from head to tip of tail, 5 ft. 10 in.; Av. height at shoulder, 2 ft. 6 in.

sionally shows pluck, as I shall presently show. It generally confines its attacks to the maimed, and carries off infants, and usually feeds on any carrion or offal it can find. These animals are very noisy at night, only inferior in that respect to the jackal. It is not of much account as a beast of the chase in India, but when one is found on a ridable plain, it is always a feather in a hunter's cap to run down on horseback and spear a hyæna. I have had a strong shaft—a solid male bamboo—of a spear that had survived many a boar hunt severed in two by a hyæna, after I had thrust it right through him. They not only possess considerable speed, but double like hares.

A friend of mine when chasing one of these beasts, after spearing him had the misfortune to fall with his horse almost on the top of the hyæna. The brute turned round, gave a snap, and bit the horse's leg almost in two just above the pastern, and then gave up the ghost. The horse had to be destroyed, of course.

The natives catch them by baiting a kid over a pit-fall on a small platform, which gives way when the hyæna springs, as it has to do, for there is a gap left all round.

When I was a mere griff beating some ravines, within 50 yards of me rose, only to disappear almost instantaneously, three striped bodies. My heart palpitated considerably faster than its wont, for I took the unclean brutes for tigers, and I was on foot in rather heavy jungle, but my disgust may be imagined when three striped hyænas trotted past my post within 10 yards, but in revenge for my disappointment I laid two of them low. If a dog hyæna, with his consort, come across a solitary dog they will muster up courage to attack it and make a speedy ending of him, but an officer of my regiment had a Poligar dog that fairly beat off a couple. How the fight might have ended had my friend not come to his dog's assistance I do not know, but he had the best of the fight up to then.

The hyæna is nocturnal in its habits, and will now and then carry off sheep and goats. As the hyæna desecrates graves, it is detested by the natives of India, and when one is killed the body is treated with every mark of indignity and finally burnt.

F. T. POLLOK.

IBEX—*Capra sibirica*, Blyth, *Cat.* 543; *Capra sakeen* and *Ibex himalayana*, Blyth; *Capra pallasii*, Schintz; but now universally, *Capra sibirica*.

Native names—*Keyl*, in Kashmir; *Skyn*, in Ladak; *Danmo*, in Tibet; *Buz*, in the Upper Sutlej; *Tangrol*, in Kulu.

The other varieties of this group are:—*Capra ibex*, the Alpine ibex or steinbok, now almost extinct, except in the royal preserves of the King of Italy, on the southern side of the Alps: *Capra pyrenaica*, the Bouquetin of the Pyrenees, the Sierra Nevada, and other ranges in Spain, also becoming rare; *Capra caucasia*, from the Caucasus; *Capra ægagrus*, Asia Minor generally, Persia and Afghanistan; *Capra nubiana*, or *sinaitica*, from both sides of the Red Sea; and *Capra wali*, founded on a single specimen from Abyssinia. Of all these varieties the most vigorous and typical animal is the Himalayan ibex.

Habitat—The Himalayan ibex may be said to be found generally on the highest ground throughout the Central Asian and Himalayan region from Gilgit to Nepaul. It is best known to sportsmen from the large number of fine heads which are killed year by year in the happy hunting grounds of Kashmir and Baltistan. Though it will be many years before the Kashmir ibex is killed out, there is no doubt that the modern rifle, and the modern shikari too, are gradually reducing the numbers of ibex in the best known and most available parts of Kashmir. Nullahs which, twenty and thirty years ago, were full of fine heads, are now hardly worth a visit,

and to secure good heads the sportsman must push on to the further grounds of Baltistan, Shigar, Chilas, Gilgit, and others.

It is not found on the south-western side of the Vale of Kashmir—though good heads have come from the Hazara country, and the Gilgit district is said to be full of ibex and markhor. South-eastward the ibex extends from Kashmir and Baltistan through Ladak, Lahoul, Spiti, Koonawar, and Chumba, as far as the borders of Nepaul.

It is found on the higher ground in the Pamir region, in the Tian Shan, and in the mountains of the head waters of the Irtish; and no doubt

HIMALAYAN IBEX.

Measurements—Av. height at shoulder, 40 in.; max. horn meas., 54¾ in.; av. horn meas., 35 in.

in many parts of Central Asia, wherever the ground is suitable to its habits.

Description—The general appearance of the ibex is well known. Of a somewhat stout and cobby appearance, it is nevertheless extremely active, and possesses very sharp eyes and nose. A good buck ibex will stand some ten hands at the shoulder, and with his massive, curving horns, and long, shaggy, black beard, he is a noble beast to observe or to stalk. The horns have been known to reach a length of 54 inches and a girth of 12 inches. But such heads are rare. Anything over 40 inches may be considered a good head, and one of 45 is a prize that does not fall to every shikari.

Of course the measuring tape is laid along the outside curve of the horn, but not run into the hollows between the knobs.

The female is an insignificant animal, with weak little horns of 9 or 12 inches in length. She has, however, a pair of eyes sharper, if possible, than the buck; and exhibits an exasperating patience in sitting for hours on some commanding crag from whence she may command the only approach accessible to the human enemy.

Ibex vary a good deal in colour and in character of head, and upon these insufficient data naturalists have sometimes founded impossible varieties.

Thus Mr. Delmar Morgan, in a footnote to his translation of Prejvalski's *From Kuldja across the Tian Shan to Lob Nor*, says:—"In all probability this is *Capra skyn*, not *Capra sibirica*, the horns approaching at the tips and turning inwards." This refers to an ibex obtained near the Yulduz valley.

Now, if the name *Sibirica* is to be used at all to distinguish between these two species, it ought surely to be given to the ibex of the Siberian range of the Tian Shan, in distinction from the ibex of the Himalayas, and not *vice versa*. Moreover, the word *Skyn* is the local name for ibex in Ladak, where the ibex of course belongs to the Himalayan variety—if any variety exists. Further, in the anteroom of a mess at Lucknow, the present writer saw an ibex head whose horns curved inwards and the points actually met and crossed. This head certainly did not come from Siberia, and almost certainly did come from the Himalayas.

Another so-called difference is founded on colour. Gordon mentions black ibex on the Pamirs; the writer was shown blue ibex in Ladak. This difference may be accounted for partly by the different seasons at which animals have been observed, and partly by the tendency to accommodation in colour of the coats of many wild animals—especially fish and birds—to the ground they habitually occupy.

One of the most striking characteristics of the ibex is his smell. The writer has several heads killed in 1883 and 1884, and they are to-day quite strong in the unmistakable aroma. In stalking ibex this quality is often of considerable assistance to the shikari. In the still, pure air of the high mountains there is no mistake about the proximity of ibex if the wind be in the right direction.

Stalking—Ibex stalking in Kashmir in the months of May and early June is most fascinating work. An ibex nullah generally combines the finest features of mountain scenery. Wild and picturesque groups of fir and birch surround the rocky torrent in the valley bottom. Here and there a green patch provides a camping-ground. Right and left rise rugged cliffs and masses of rock and shale and snow, while at the head of the valley gleams the dazzling whiteness of some mighty bulk of snow and ice. This is the home of the ibex, and if the sportsman is content to work hard and exercise self-

control, he will sooner or later come to terms with some fine old bucks. "Make sure of the easy chances" is a maxim for stalkers in general. But in no case is it of such constant application as in that of ibex stalking. Ibex stick very hard to the same feeding grounds. The sportsman should, therefore, refrain from firing at doubtful chances and so disturbing the herd. Left to themselves they will be found again with tolerable certainty near the same spot, and in time they will be sure to take up a position where a tolerably certain approach may be made. Ibex, when alarmed, prefer to move upwards, and by remembering this fact several shots may be obtained before they get out of range.

Ibex are not tough beasts to kill, and a bullet in the ribs generally brings them to bag. When wounded an ibex almost always works up-hill till he dies, when his position is pretty surely indicated by a number of lammergeyers and other birds wheeling constantly above the spot.

April, May, and early June are the months when most of the ibex are killed in Kashmir. After that date the higher ground is open to them, and they are difficult to follow. In the rutting season at the end of October and in November they have been hunted with success.

S. H. Whitehead.

KASHMIR—Srinagar, the Kashmir capital, is reached by tonga in three days from Rawul Pindi, the nearest railway terminus. At Srinagar, with the help of a "banker" or agent, leather kiltas or coolie baskets, grass-shoes, sandals, snow spectacles, ice-axe, and cheap "puttoo" suits are obtained; rifles, telescope and field-glass, tents, and perhaps tinned stores, being brought from India.

Engaging a shikari and about twenty coolies, the sportsman must walk for some well-known ibex nullah, say ten to thirty marches from Srinagar. If starting late, say after April 1st, to secure a good nullah he must make two or even three ordinary marches, perhaps as much as thirty-two miles, in a day.

A nullah is any valley or gorge, not a main valley; and the rule generally accepted, and recognised by the Kashmir authorities, is that the first comer (sending on the tent will not do) has the right to the shooting, to the exclusion of other men.

The best nullahs are those rising gradually to the watershed of a range, winding perhaps for thirty or forty miles, before their source is reached in one of the great groups of peaks untrodden by human foot. Such a nullah, by its length, enables the sportsman, having disturbed one locality by shots, to shift camp further up to fresh ground; and in such a nullah he will probably be fairly near the haunts of the ibex, entailing but a short daily climb to the shooting-ground; for in May and June, the best time, it is at the edge of the melting snows, where the young grass is springing up, that the ibex are to be found.

A steep nullah, rising in two or three miles to the snows, is bad for sport, for a shot or two will disturb the whole, involving a search for another nullah just at a time when men are crowding into the country; and in such a nullah it may be nearly a day's climb to ibex ground and back, leaving little time for stalking.

The writer's first few days at ibex will give a fair idea of the sport.

We reached our ground, in Baltistan, and some twenty marches from Srinagar, early in May. The main valley, for which we had been making, contained four good nullahs, already

Himalayan Ibex.

occupied for periods of one or two months; and there were two small gorges, each rising so abruptly to the snows that to carry the camp two miles from its mouth necessitated an arduous climb. We did this, however, on the evening of our arrival, and next day we could see the snows some twelve hundred feet above us, the sides of the gorge falling to the camp in rugged precipices.

With the shikari, local guide, and luncheon coolie, we climbed three-quarters of a mile further up the nullah, to within two hundred feet of the snow; and after spying through the glass for a long time, there appeared, just opposite and fifteen hundred yards distant across the gorge, a herd of nine ibex, scattered over the rocks. They were threading their way among the *débris* at the foot of a perpendicular sheet of rock, the

face broken by ledges sloping at a gentle angle down to the moraine below.

Along one of these ledges they turned, going leisurely in Indian file, and one by one they stopped to lie down, or to feed about on the scanty herbage in the crevices.

Those acting as sentries lay with head looking out over the valley, nearly as motionless and colourless as the rocks themselves.

For four hours we sat and watched them through the glass, trying to discover a "shootable" buck; but when towards three o'clock they one by one rose and fed slowly down, and then crossed a snow-filled gully, not a pair of horns could we see larger than thirty inches.

Blinding snow and sleet coming on, we now made for home.

Arrived at camp, the servants pointed out two buck ibex, with fair horns, on the cliff directly over and 800 feet above us, looking down from a narrow ledge; but it was too late to attempt anything, and we watched them as they scrambled away up hill.

Next day, after a very cold night, we scaled this precipice by a deep rift, there being two bad places; and at last, emerging at the top among ragged points of rock, we saw a herd of ibex some two hundred yards away, across a chasm, on another mass of rocky pinnacles.

They were already alarmed and making off, but the last buck, while rounding a corner into safety, received a ·577 express bullet, "telling" loudly, but rather too far back behind the shoulder; and he disappeared after the others.

We gave up all attempt at recovering the wounded buck that day, as the ground was too bad to risk the chance of being caught by the snow and sleet which came on every afternoon; but our guide, knowing the ground, went after it with some villagers next morning, and found it dead near the spot where it had been hit, and brought the head into camp.

The nullah having now been disturbed, we moved camp to a village at its mouth, and slept there; and next day, after a tedious delay while the villagers were bridging a torrent, we crossed the main valley and ascended the bed of the other small nullah opposite.

Here, after watching a herd of twelve ibex daily for four days, we were able to get near enough (about three hundred yards) to pick off two bucks with a Lee-Metford rifle, using "service" bullets. The horns of these measured $37\frac{1}{2}$ and $36\frac{1}{2}$ inches respectively, those of the buck shot in the other nullah only $35\frac{1}{2}$ inches.

The question, what is a "shootable" head, has been much discussed, but it is generally considered that an ibex trophy of thirty inches is not worth having, one of between 40 and 45 inches is a head to be proud of, and heads of over 45 inches are very rare. There are still plenty of ibex, but near the Vale of Kashmir itself the heads, through constant shooting, are becoming very small.

H. G. C. Swayne.

Best Authorities on Kashmir Ibex.—Kinloch's, *Large Game Shooting (Thibet and North-west)*; MacIntyre's *Hindu-Koh*; Badminton Library, *Big Game Shooting*, vol. ii.; Ward's "Sportsman's Handbook" in *Kashmir*.

SPAIN (*Capra hispanica*)—This splendid beast is seldom the object of the English sportsman's pursuit, yet Europe can show few finer trophies than the bearded head and massive horns of an old ibex ram. Such lack of attention may be accounted for in many ways, expense being perhaps the main obstacle. Apart from this, however, to carry out a trip satisfactorily, a certain knowledge of Spanish, good lungs and indomitable perseverance are essential to success. The game is not numerous, and the man is lucky indeed who succeeds in bagging an ibex without several days—indeed weeks—of arduous labour.

Habitat—The ibex, in Spain, is confined to four or five points, all in the highest mountain ranges, the two best known, or rather least unknown to the Englishman, being the Pyrenees, and the Sierra lying along the Mediterranean coast, not far from Gibraltar. Their haunts in other sierras, and more especially in Gredos, have never, I believe, been visited by an English party except ourselves. In the majority of cases, the goats live exclusively among the barren rock-summits and crags (*riscos*) at elevations of 6,000 to 10,000 feet, only descending to lower levels under the stress of severe winters. There are, however, ibex in isolated Sierras of lesser altitudes, when they are found frequenting scrub and even forest. In all cases their habits are nocturnal, the day being spent either basking in the sun, or sheltering from its rays in some cave or crevice amid crags and precipices.

Description—The Spanish ibex is peculiar to the Peninsula, differing from its Alpine congener in the form of the horns, which in the latter are scimitar-shaped, with annular knobs, while the Spanish goat's horns show a spiral form, diverging outwards, then recurved backwards and upwards; with the rings (one for every year) following the oblique course of the spiral curve.

A head of 24 inches must be regarded as more than a respectable trophy. The photograph represents an ibex ram whose horns exceeded 29 inches, but few (if any) such now survive in the Cordilleras of Central Spain.

The ibex ram is at his prime when ten years of age, but the horns continue to add extra rings for two or three years. The total weight of a ram (clean) is about nine to ten stone; the females are at least a third less in size, and have only rudimentary horns of some six or eight

inches in length. The young are born in April and May, one, or more rarely two in number, and follow from the first with surprising agility. When alarmed, the ibex emits a shrill whistle, sometimes repeated several times. The rutting season begins in November, the rams congregating during the preceding month, when (barring the possibility of early snow-falls) they often afford a favourable opportunity to the stalker.

Shooting—The Risco Mansor, the highest point in the Sierra de Gredos, is the real home of the goats, towering on three sides over the Laguna de Gredos, a gloomy little lake of unknown depth, by whose stony margin we had

Spanish Ibex.

Measurements—Av. height at shoulder, 26 in.; av. horn meas., 22 in.; max. horn meas., 31 in.

pitched our camp in August and September, 1896, after many hours of stiff climbing. As we could not go where the natives went without breaking our necks, we had recourse to drives, each "*montería*" taking a whole day; the guns were placed in the small passes (*portillas*) of the giant ridges, dividing one valley from the next, and the beaters then brought up the whole country before them, the gun highest up having the best chance, as the goats when disturbed always make for the highest ground.

To our idea, however, too little attention was paid to wind, and indeed this negligence at a later date lost us a nice chance at a big ram. It was quite as much as we could do to reach these passes, for the distance we could travel in an hour was covered by the native in ten minutes, and by the ibex in thirty seconds. Yet perseverance was rewarded, and after a week's hard work we had got three ibex between the two of us, one a very good one, and one of our beaters had shot a small one-year-old male. We were lucky in having fine weather, as the lightning is terrible on these heights, and existence in our isolated position would have been unbearable in rainy weather, as there was absolutely no shelter. At night all the water in the camp froze solid, while at mid-day the heat reflected from the rocks was almost unbearable, yet we suffered no harm from the changes of temperature beyond the peeling of skin from our faces.

We had twenty mountaineers with us from the tiny village beneath, some over sixty years of age, splendid specimens of agility and grace combined with strength, and in perfect condition. Curiously enough, only two or three of them had ever seen an ibex before; these exceptions being the professional hunters. The flesh is much esteemed and fetches a good price in the valley below. These men are continually after the ibex, and as they shoot male and female alike, are gradually exterminating them; indeed, only twenty years ago, there were large numbers, where now they have ceased to exist. All our beaters (among whom was the Alcalde of the village) wore hempen-soled shoes studded with nails with shilling-sized heads, which gave a perfect grip on the rock, though every evening they required renewing.

The striking peculiarity of the ibex-haunted crags was their extremely irregular outline and broken nature, rising against the deep-blue sky, clear cut in saw-like ridges, or in monster pinnacles and spires like a cathedral; again, the line would be broken by deep rifts and dark crevasses. Below, by the lake, though not adjoining, were green grassy slopes, where our tent was pitched.

Bertram F. Buck.

ICE YACHTING—[*See* Yachting].

ICELAND, SPORT IN—Iceland is most easily reached by the Icelandic Government's Steam Navigation s.s. *Vesta*, which leaves Leith in the first week in June (agents, La Cour and Watson, Leith). The voyage takes only three days, as the *Vesta* goes direct to Reyjkwick, the capital of Iceland. The Danish Royal Mail boats, National Line (English agents, George Turnbull and Co., Leith), leave Leith every fortnight from the first week in April to the last in October. The run by these boats takes seven days, as they call at the Faroe and Westerman Islands. The return fare is £8, food not included, and the ticket is available to return by any boat of the above companies.

Clothes and kit to take—The same clothes are required as would be used in Scot-

land in the autumn. Long high boots, waterproof coat and hat, two pairs of shooting boots, a sweater (for the voyage and cold days), a pair of wading trousers and waders, and necessaries for repairing them, brogues with leather soles and nails clenched on the inside (the rocks are so sharp that felt soles are no use). The high boots are indispensable, as you have to ride through rivers and arms of the sea on your pony; and the macintosh must be your inseparable companion, as Iceland is a terrible country for sleet and rain showers. The most useful coat, adapted for riding, shooting, and fishing, is the "Buckland," made by Anderson, Anderson, and Anderson. A compass and a good map should be taken, also a "Jaeger" sleeping bag, for it is very cold at night. Take also a thick great coat. It is advisable to take gloves and nets, to keep off the black flies, gnats, and midges. A collapsible boat is absolutely necessary if you are going to fish on the lakes, as they are without exception boatless. The best boat is the Douglas, which measures 8 ft., weighs 40 lbs., and costs £6. Above everything, take two tents. The farmhouses are the dirtiest places on earth, and sleep with Esquimos is preferable to a night passed with an Icelander's family. A pair of Edgington's Whymper tents, weighing 18 lbs., made of Willesden canvas, are the very best (one for yourself and the other for your servant). These cost £4 each, and measure 8 ft. by 8 ft. by 6 ft. The floor and sides of these tents are all in one. For stores, I should advise a good supply of oatmeal for porridge, biscuits, tinned fruits, tea, sugar, coffee, &c. These should be packed in cases about 2 ft. long by 18 in. wide by 1 ft. high. You can get excellent mutton (a sheep will cost you 8*s.*), and it is policy to buy from a farmer if you are shooting or fishing on his land. Provide yourself with a couple of petroleum oil-stoves, such as are supplied by the Military Stores and Equipment Co., for cooking, since no fuel is to be got except dried cow-dung. Petroleum can be got in Reyjkwick. English tobacco and Scotch whisky are both cheap in the same town. Choose either a Lee-Metford rifle and Tweedy bullets or a 12-bore Paradox for bear and deer. Take also two 16 ft. fishing rods, and one 14 ft., wooden, not cane, as broken wood can be mended, but cane cannot. A heavy trout rod should be taken. Do not omit a bucket canteen, a camp-bed, a folding chair and table, but hire in Reyjkwick any boxes that may be wanted for carrying clothes on pony back.

Of course, it is much more comfortable to take an English servant, since natives make idle and dirty attendants, and you will have to do pretty well everything for yourself if you depend on them. A guide who can speak English can be engaged at Reyjkwick without difficulty at 4 kroners (about 4*s.* 6*d.*) a day. Gunnlanger, and his brother Johannis Peterson, I can personally recommend

As regards sport—Salmon fishing is, *par excellence*, the sport of Iceland. Near Reyjkwick and other towns the farmers are getting to know the value of their rivers, and ask for payment, but at any of the distant rivers and lakes you can get splendid sport *free*. It is customary to give the farmer living on the banks a small tip and some of the fish you catch, or else employ him during your stay on the river as your local guide; then you will be allowed to fish and shoot as much as you like on his land. The best rivers are those of the North and West coast. The East is poor and the South useless, because the rivers are all glacier streams. If the sportsman wishes to hire a river, he should do so some time before the beginning of the season—June 1st. Any information as regards rivers to let can be obtained from Mr. Paterson, the English Consul at Reyjkwick. The Elidao, a small river within three miles of Reyjkwick—the lower and best portion of which is owned by Mr. H. A. Thompson, of Copenhagen—is without exception the best river in Iceland, though the salmon are all small, averaging 5 and 6 lbs. There is enough fishing in Mr. Thompson's water for two rods. The sea trout in this river are also small, few being above 3 lbs. As many as twenty salmon have been caught in this river in a day by one rod. The Tvera and Grimsa, both a day and a half from Reyjkwick, are both good rivers. The upper reaches of the Tvera are two and a half days from the town. Here the salmon and sea trout run heavier, a few salmon having been taken up to 20 lbs., and sea trout up to 8 lbs. The Reynivellia Laxa—one day from Reyjkwick—is also a capital river, where most of the fish are caught in a pool below the falls. Any one intending to take a river should expressly stipulate that he is to have the exclusive right of fishing, and that no fish should be netted before he arrives, otherwise he may find that these things have been done up to the very day of his coming. In the Sog river, one day from Reyjkwick, permission to fish is granted for the asking; and here very fine char, brown trout, and salmo fario are to be got in plenty. Some of these fish weigh 10 lbs. The best inland places in the north are the Myvatn lake (Eng. fly lake), and the rivers draining it, and the rivers falling into the Hunafloi. In the west the Fiskvotn (Eng. fish lakes) and the rivers running from them, and all the big rivers falling into the Faxafjordr. On the south-west the streams running south from Tinc-valla lake, the Sog, Hvita, and Mima laxa, also the Pjorsa. The north-east is unknown as a fishing ground, and is full of grand rivers and lakes; but they are so hard to reach, and so far from Reyjkwick, that I know of no one who has tried them yet; in fact, I believe them to be virgin water up to the present date.

Salmon flies should be tied on single hooks, Nos. 1·0·2 0. The best patterns are the Silver-

grey, Butcher, Durham Ranger, Jock Scott, or any other gaudy fly with plenty of silver tinsel. For trout, Zulus are extra-deadly, also the Big Red Spinner, Marchbrown, and a green Mayfly. The lake fish like Blackgnat, Alder, and Coachman. Take also a few prawns. The Devon and Phantom minnows are of little use. Certainly the most deadly bait for salmon is the despised worm, and these can always be got from the nearest farm. A good stock of worm-hooks should be taken, Nos. 0 and 2 0, tied on thick single gut. Strong single casts should always be used, as light casts are of little use, the rivers being rapid and the currents running between large, sharp boulders. If you mean to fish for char, take some spinning rods. They are a grand fish, which run to 10 lbs. or more, but you must spin deep for them. Lines of about 100 yards are long enough for the rivers, which are not very big. Excellent sea-fishing is to be got free all round the coast in a boat. Ordinary extra-strong sea tackle must be used because of the large halibut.

Whaling is much pursued on the north-west coast, and permission can generally be got to accompany a whaler on application to the owners.

Reindeer are to be found in the desert mountains of the east and north-east. They are hard to stalk, but carry magnificent heads, beating the Norwegian and Spitzbergen deer. No license or permission is necessary to stalk them, but there is a close season.

About a dozen Polar bears are got in the year, in January and February, when the Polar pack ice comes down and rests on the north coast. By wintering in the north one would be sure to get shots at one or two.

Blue foxes are fairly plentiful all over the island, but they are trapped and poisoned in the winter, as the Government gives 10s. to any one who kills a fox, on account of the depredations these animals commit among the Eider-duck.

There are enormous quantities of Willow-grouse, which may be shot without license from August 1st to February 1st. Permission to shoot these should be asked from the farmer on whose land you are, which he will readily grant for a few kroners.

Wild Duck are to be found on all rivers and lakes—very plentiful. In August the bogs swarm with Golden Plover, and there is always a fine sprinkling of Snipe.

The Eiders are not allowed to be shot under a heavy penalty and confiscation of the gun.

Divers, Loons, Puffins, Gulls, &c., swarm in clouds round the rocky coast, while most of the lochs have a pair of Great Northern Divers on them. Curlew abound all over the interior, and are grand eating.

The shooting season for Wild Fowl commences on July 20th. Cartridges and powder should be taken from England.

English is understood in the towns, but not in the country. Danish, Norse, and German are spoken at all the trading stations. Icelandic is rather hard to learn, but is not necessary if you have a guide.

An English sovereign or banknote is much appreciated in Iceland. The local money chiefly consists of ore, a hundred of which go to the kroner (Eng. 1 1½). No dogs are allowed to be imported.

Two things to be avoided are: First, sleeping in a farm in a native's bed, as leprosy and other bad skin diseases are very common in Iceland. Second, never stroke or pat a native dog, as they almost invariably suffer from a disease called *kist*, which is most contagious to man. Over 10 per cent. of the natives die of this. Shoot any dog that comes near your tent.

ERNEST L. S. ANNE.

INDIAN GAZELLE—The **Chickara, Chinkara, Ravine Deer,** or **Indian Gazelle** (*G. bennettii*), is found throughout the plains of India, with the exception of some parts of Lower Bengal and the Malabar District, and while preferring low rocky hills intersected by ravines, and clothed with scrub jungle, or tracts of the medium forest type containing glades, or open savannahs suitable for grazing, it is also numerous on some of the large plains of Southern and Central India, and on the confines of the sandy deserts of Rajputana and Scinde.

The buck is about 28 inches in height; colour above, deep fawn, white on the sides, buttocks, and lower parts generally; tail 8 inches long and black in colour; horns 10 to 13 inches according to locality. They occur in herds of from six to twenty individuals, but solitary bucks are not uncommon. Whether standing or moving they have a habit of wagging their tails vigorously, the movement often betraying their presence, when they would otherwise escape notice. Being small and active they are difficult to hit; the vital spot moreover is but a few square inches in size, and for this reason I preferred a small Express rifle fitted with telescopic sights, which facilitated accuracy of aim up to 180 yards, whereas with the ordinary bead-foresight the body would be greatly obscured at half that distance. The Chickara can exist for more than two days without water, being in this respect only equalled by the Nilgai.

On the verge of the Bikaneer desert the country is sandy, flat and devoid of cover, and although both Blackbuck and Chickara are abundant, they are almost unapproachable.

In the month of February, small patches of *Chenna* (pulse) are dotted here and there, near which one may sight an occasional herd, numbering some fifteen or twenty animals. Dismounting from his camel, and keeping close to it, the sportsman should direct the driver to

shape his course so as to pass diagonally ahead of the herd, on the chance of their massing as is their custom, and giving a broadside shot at a good buck. On gaining any suitable cover the sportsman halts out of sight of the herd, directing the camel-man to move on circling gradually.

I recollect on one occasion getting in this way within 150 yards of a herd, which moved off, watching the camel intently, without giving the chance of a shot. The best buck was always on the move. I managed to gain the cover of a large bunch of weeds and peeped through the leaves.

The camel was 500 yards away, circling

INDIAN GAZELLE.

Height at shoulder, 28 *in.*; *Av. horn measurement*, 11 *in.*; *Max. horn measurement*, 14½ *in.*

slowly round, and about midway between us were some does—the rear-guard of the herd—conforming to the camel's movements, but watching it suspiciously the while. Thus I was the centre of a circle on the diameter of which moved the Chickara, and utilising the principle of interior lines, I soon gained a position within a short distance of their probable line of retreat. Manœuvring in this manner, I soon saw an old doe within 80 yards pioneering a big buck straight towards me, but they vanished in a fold of the ground not 50 yards distant, without giving a favourable opportunity for a shot. Being uncertain whether they might not reappear at any moment and discover me, I decided not to stir. Immediately afterwards another doe suddenly appeared on some open ground to the left and would have seen me had I moved. She was the leader of the herd, and was followed by several does and a young buck, moving in file across the open, about 90 yards distant. I began to wonder what had become of the big buck, when he suddenly dashed forward and routed the youngster by butting him in the haunches, and while he stood triumphant I pressed the trigger. He trotted forward 20 yards wagging his tail furiously, then wheeling round, galloped back a few paces, halted for a second, and fell dead. The bullet had grazed the heart. His horns measured 13 inches, the best I ever got. The morning's sport was not yet over, for I shot another buck on the way to camp, but while occupied in stalking a flock of eight bustards, a wandering camel-man found my Chickara, annexed it, and ran like the wind towards a village nearly a mile away, where pursuit would have been useless.

[*Note.*—The name Chickara or Chinkara is also erroneously applied to the **Four-horn** (*Tetraceros quadricornis*), an Indian water-loving antelope (see **Antelopes**).]

ARTHUR POLLOCK.

IRISH SPORT—In Ireland to-day, and indeed at all times, the sports are sufficiently characteristic of our people to mark them as distinctly Irish and national. In spite of this it is surprising to find in every day experience that persons otherwise well informed in matters of sport, are astonished and incredulous when they learn for the first time that Ireland possesses such a thing as a national pastime.

It must certainly be as new, as surprising, to such persons to be told on the authority of Gaelic scholars, that long before Cæsar came to Britain the royal game of hurling was a feature of Irish daily life, and was patronised, and practised, among others, by King Lugh Lamhfhada at the famous fair of "Tailtin" in the year of the world "3370." This, the royal road to excellence in other exercises, was practised by Cahir Mor, Cormac MacArt, the redoubtable Finn MacCool and his son Ossian, and others, up to the evil days of Roderick O'Connor, Ireland's last High King, in 1183. Though dark and troublous days followed the reign of Roderrick, the fostering and encouraging of the national game were never lost sight of. The O'Connors, Kings of Corcomroe, in the County Clare, next became its patrons, and by the establishment of a fair in the vicinity of Mount Callen and subsequently at Lahinch, the modern paradise of the golfer, handed down, almost to the present time, this unsurpassed recreation.

A game such as this, which traces its origin back through ages into the past, merits at least a sympathetic notice, if only for the sake of its antiquity.

Hurling or **Caman**, pronounced **Common**,

is an outdoor game, needing a field at least 140 yards long by 84 wide. At each end there is a goal with posts 21 feet apart and a crossbar 8 feet high. Twenty-one feet on each side of the goal posts stand the point posts, which must not be less than 16 feet high. Across the field are drawn at 21 yards, 50 yards, and half-way, lines which are parallel with the goal line. The next requisite is a hurley, which in shape approximates to that of the hockey stick, but may, however, assume almost any form which his playing or his fancy suggests to a player, provided always he does not violate first principles.

The **slitter** or ball, which is made of cork and woollen thread covered with leather, should never exceed 5 inches in diameter nor weigh more than 7 ozs. In such a ball as this there is a limpness and elasticity which free it from the maiming dangers of the cricket ball, and make playing even in the closest quarters absolutely safe.

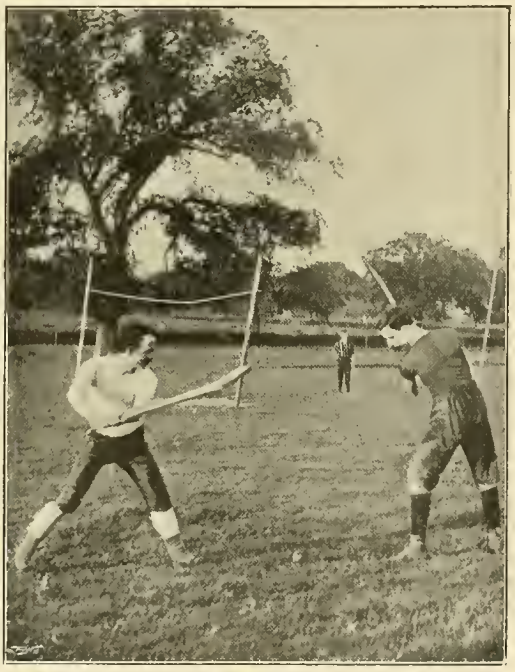
To hurl with ease, grace, accuracy, and effect, in fact, to play the ball on both sides, it is necessary to hold the hurley in the orthodox manner, that is, placing the left hand below the right, contrary to hockey and cricket experience. In all matches seventeen players form a team, though by mutual agreement fourteen is allowable. In play the position which each man is to occupy is rigidly marked out for him.

After the toss for goal, the captains lead their men to the centre of the field where, forming two opposing lines with backs to respective goals, each player takes the end of his opponent's hurley. The referee appoints two goal umpires for each goal, who record the "goals" and "points" made, and also two sidesmen, who, whenever the ball passes over the side lines, throw it again into play. When the preliminaries are completed, the referee throws the ball on the ground, between the two lines of players. The immediate play is taken up by those players whose places are in the vicinity of the centre of the field, the others hurrying in all directions to take up their positions.

In hurling we are not permitted, under penalty, to take the ball off the ground with the hand, a privilege extended to the goal-keeper only when he is returning it into play after it has crossed the goal line, or after a "goal" or a "point" has been made. When hurleys become crossed, or otherwise barred from playing a ball, as for instance in a scrimmage, it is considered in such cases legitimate play to use the foot to obtain it, but a too generous use of this privilege is decidedly bad form. In scrimmages too, when a ball is in tight quarters, wild or reckless striking at it is not only foolish and frequently ineffectual, but positively dangerous to all concerned. It is only when a ball is in the open and is the common property of the "field" that we may hope to witness the finesse and finish of the practised hurler.

To an onlooker the game may appear commonplace and destitute of skill, but practice readily shatters such an idea. To become a good hurler requires great physical activity, a sober judgment, nerves and muscles as responsive as thought, and an eye that can readily and with unerring instinct measure the ever varying paces of a ball.

In playing, one of the most telling strokes is that obtained by meeting a ball, travelling towards an opponent's goal, either in the air or on the ground, with a swinging hurley, and, for adding pace to a ball, this stroke corresponds to the hit to "long-on" in cricket. Meeting the ball on the hop, as it comes from an opponent, is an easier and more playable stroke if the pace



Hurling.

be not too severe to set to it. Raising the ball with the "boss" or point of a hurley, and striking it while in mid-air, is a graceful and telling stroke, though a sore trial to a novice. This is a very fascinating stroke, which should rarely be attempted in matches, and then only in the most favourable circumstances by experienced players.

Some players, by gently tapping a dying or a dead ball against the ground, make it rebound, when they meet it with a swinging stroke and send it whistling through the air. Taking the ball into the hand by means of the hurley, or catching it when it is in the air, or on the hop, is good smart play, but it must be struck off at once, otherwise a penalty is incurred. In the progress of any match there may be witnessed at least a dozen other methods of playing a ball,

the treatment of which, while giving large scope for individuality, marks the finished player.

In hurling, as in other games, the commission of certain acts would be a source of endless discomfort to players, if tolerated, and would mar the pleasure of true sport. Tripping, holding, catching, or jumping, &c., &c., are penalised at the discretion of the referee, who may for every offence grant a "free puck" or stroke, which must be taken either by striking the ball off the ground, or raising it by the boss of the hurley into the air and striking as it descends.

The purpose of the game is to drive the ball through the goal posts, when a "goal" is recorded, or between the "point" posts or over the cross bar, when a "point" is registered.

A Long Throw.

A game such as I have cursorily glanced at, a game fast yet not fatiguing, playable by all, free from irritating scientific niceties, suitable for summer and winter playing, free from danger and full of "divarshuns" should, if widely and sufficiently well known, become a ready favourite with all who desire to find an exercise, which contains in itself all the elements of a physical education, and is at the same time a veritable compendium of sport.

Except with the Dublin University, Dublin and county, and a few of the northern counties, the playing of Rugby or Association Football has very few practical friends. Irish indifference or opposition is directed not so much to football as to the form it takes. This attitude towards a sport would be as unreasonable as it would be unwarrantable if maintained in the case of **Gaelic Football**, which, unfortunately for its reputation, has never had a fair opportunity of displaying its virtues before an English gathering.

Like hurling, it may be played both in summer and winter, and though it cannot boast of having yet conquered that conservatism which attaches many to Rugby and Association, it may feel some pride, for so short an existence, in possessing more than a dozen clubs and a County Board in London, as well as several others in the provinces.

The field necessary for Gaelic Football is in measurement and detail similar to that needed for hurling, the number of players in both games being seventeen a side.

The ball, which is of the Association pattern, must not be less than 27 nor more than 29 ins. in circumference, and must be between 13 and 15 ozs. in weight.

In Association and Rugby each team, at commencement of play, occupies positions behind the centre of the field, but in Gaelic each side extends from goal to goal: an arrangement obviating long and distressing runs, which render play for any time fatiguing if not absolutely impossible.

In this game there are no "scrimmages," no "hands," and no passing except by means of the feet or a blow from the hands; and as no player, except he be in possession of some very decided advantage with the ball, plays beyond his position in the field, the game is necessarily a fast one. Hands are freely used either to strike or catch a ball, which when caught must be struck or kicked off at once.

The ball, to begin the play (and also at half-time), is thrown up at the centre of the field by the referee, but after every "goal" or "point" scored, or after the passing of the ball over the goal line, it is kicked into play from the seven yards square in front of his goal by the goalkeeper.

Should the defending side drive the ball over their goal line, the opposite side have a free kick from the fifty yards line.

Should the ball go over the side lines it is thrown in, in any direction, by one of the side opposed to that which kicked it out—a method of penalising reckless and faulty playing.

Dodging in front of a player to prevent his getting the ball, as well as tripping, holding, butting, catching, &c., &c., are fouls, for which a free kick is given. Whenever a "free kick," or a fifty yards kick, is given, no player of the opposite side must approach nearer than fourteen yards until after the ball is delivered.

Enough has now been written to show that, as an outdoor game Gaelic football has strong and attractive claims to a sympathetic consideration.

Should it succeed in creating a favourable impression and become a feature of English daily life, practice will confirm players in the wisdom of their choice, and any effort to dislodge or rob us of so worthy a game would be stoutly and reasonably resisted.

Another game, the game of **Handball**, or Fives as it is called in England, or Caitch, the name by which it is known beyond the Tweed, is a very popular one in Ireland, and of all our games is that best adapted for the wet day or winter recreation.

Nearly every town in Ireland formerly possessed its "court" or "alley," the floor of which was about 60 feet long by 28 feet wide. At one end of the floor stands a high plain-surfaced wall, with two walls projecting at right angles to it.

About the centre of the floor a line is drawn, called the "short line," over which, and between which and the line at 60, or the "over line," every service ball must drop to be in play. Should the side walls not extend the entire length of the court, lines are drawn to the end, "boundary lines," or "side lines," over which, should a ball pass it, is counted a "hand out" or an "ace," as the case may be.

A game generally consists of fifteen aces, sometimes twenty-one, and is won by the side or player who first gets this number. The ball, which weighs about two ounces, is hard, and covered with sheepskin.

The winner of the "coin" "tosses" out the ball, that is to say, he hops it on the ground, then strikes it with his hand against the plain wall when, if it pass over the "short line" and is not returned by the other side, it counts as an "ace" to the server. Should it be returned however, and neither the server nor his partner play it, it is a "hand out." The other side now take the service, when the game goes on as in the first case, until both partners' "hands" are out, when the first players retake the service.

If a server "toss" out three consecutive "short" balls—that is, a ball which drops short of half-way line—or should he in serving strike his partner, either of the side walls, or himself, with the ball before it touches the front wall, it is a "hand out."

Though not completely suited for a town sport, the game known as **Bowling**, that is, throwing, after the manner of the underhand bowler in cricket, metals or shots, generally about 4 lbs. each in weight, along the country roads, is very popular in Ireland.

It has for some reason incurred the active hostility of the Royal Irish Constabulary, many of whom are its greatest exponents, and as a consequence it has to be surreptitiously practised on the little frequented roads of the western counties. This game may be played by two, four, or six players, and is decided in favour of the player, or players, who in a certain agreed upon number of throws or "bowls" put the shots farthest on the road.

The course over which the game extends varies, according to the number of players, from a quarter to half a mile. A line is drawn across the road from which the play is to begin, and over which the two first bowlers must not pass until they have thrown the shot. Having stripped, each player takes his shot, and having, by a rapid glance, measured all the inequalities of the road, its slope and the quality of its margining earth banks, he goes back some twenty yards, where, poising himself like a discobolus, he runs towards the line, and jumping some four yards behind it, discharges the shot as he touches the line. The dropping of the shot on that part of the road from which it shall travel onward in its career, meeting with the fewest impediments, has often a greater influence in determining success than wild and sluggish strength. After each side has thrown, that player, or side, whose shot is behind always throws off first until the finish of the game.

Before the year 1884, when the Gaelic Athletic Association was founded for the fostering and encouragement of Irish sport, a great tidal wave of apathy and indifference passed over our country and almost swept away our pastimes. Here and there throughout the land a voice was raised on behalf of the old games, but feeble and unsupported. Cast down, benumbed and spiritless as the new organisation found us, yet, by its indomitable faith in the manhood of Ireland, it to-day, through its members, occupies a unique position in the world of sport as the holder of fourteen world's records.

A most telling testimony to the success which it has achieved in its little more than a decade of existence is to be found in the following list:—

Event.	Time.	
220 yds.	22¼ secs.	A. Vigne.
Half mile	1 min. 58⅗ secs.	W. Slade.
One mile	4 min. 25½ secs.	J. J. Mullen
Four miles	19 min. 44⅝ secs.	T. P. Conneff.
120 yds Hurdle	15¼ secs.	D. D. Bulger.
Putting 16 lbs. shot	43 ft. 5 ins.	D. Horgan.
Pushing 28 lbs. shot	35 ft. 1 in.	W. Real.
Throwing 16 lbs. hammer	(7 ft. circle, no follow) 131 ft. 7 ins.	T. F. Kiely.
Throwing 16 lbs. hammer	(unlimited run and follow) 157 ft.	J. Flanagan.
Slinging 56 lbs. hammer	(no run or follow) 26 ft. 10½ in.	J. C. Daly.
Slinging 56 lbs. hammer	(between legs with follow) 27 ft. 10 ins.	J. Walsh
High jump	6 ft. 4½ ins.	J. M. Ryan.
Long jump	23 ft. 2 ins.	P. Davin.
Hop, step and jump	50 ft. ½ in.	D. Shanahan.

From the foregoing it will be seen how successfully the G.A.A. of Ireland have stemmed the decay which was beginning to destroy Irish sporting life, and how it has, by its uphill labours, made sport more popular in Ireland than it has been for years.

T. Walsh.

JACKAL HUNTING—This sport is indulged in more by new comers or Griffins in India than by men of mature standing. On arrival in the East one finds night made hideous by the unearthly yelling of these unclean beasts, which sally forth at night and prey on any offal they can find. The Griff is startled by a cry of a "Dead Hindo!" "Where, where?" "Here, here!" and looks forward to their destruction, with pleasure. Jackals differ greatly in various districts. In Assam, where the cattle plague is always more or less prevalent, they get so fat and sleek they can barely trot along. But in India, where food is scarcer, they take a good deal of killing.

Life in many stations in India is dreary enough, and nobler sport is not to be obtained without obtaining leave, so a bobbery pack consisting of mongrels of all sorts is kept up and the jackal is hunted once or twice a week.

JACKAL.

Thursday, being the Subalterns' Sunday or holiday, is generally chosen, and the meet takes place soon after dawn. When a jackal is viewed the curs are laid on, and if the jackal is in good fettle he will give a run of a mile or more before being overtaken. Overtaken I say advisedly, being killed is quite another thing. If a cat has nine lives, a jackal has a dozen. I have seen one to all intents and purposes as dead as a door nail, yet, after the departure of the hunters and pack, he will open first one eye, then the other, get up quietly, and sneak away. They often run to earth if they come across one big enough to admit one, and often live in drains and other unseemly places. To hunt them with greyhounds is no sport, as they are overhauled at once. Spearing them is better fun, for they twist and double as well, if not better, than a hare, and seek refuge in any fissure or hollow big enough to hold them. It is better not to course them with valuable dogs. I have known more than once a dog's leg to be bitten and broken by a hunted jackal, and as they live on the most putrid flesh their bite is always dangerous, and a mad jackal is not a rarity.

Once when I was sleeping on the floor in an open verandah, a mad jackal made a grab at the junction of my neck and back, but only inflicted a slight wound. Two people he bit a few seconds later both died of hydrophobia. So I had a lucky escape. A pony bitten by him went mad six months after the occurrence, and had to be destroyed. He was killed by the men of my detachment the next day.

There is far greater sport in hunting and spearing the hyæna or the nilgai. Both require a horse to be in good training to overhaul them. The hyæna is particularly difficult to spear, as he doubles like a hare, and has considerable pace and wind. To spear a wolf is almost impossible, but I have known it done two or three times by Tom Prendergast, off a thoroughbred English hunter, and off a very valuable Cape horse. A few instances are known of the black buck having been run down and speared. Nightingale, of the Nizam's Cavalry, speared many bears, twenty-six in a month. A few others under his auspices have killed a few, but he was the only man I ever heard of who made of it a regular pastime.

In old sporting books there is often mentioned a jackal with a peculiar cry which is called the Pheeal. Some have asserted that it is made by a different variety of jackal from the ordinary one whose cry I have before mentioned. The Pheeal is not often heard; but there is no doubt that the peculiar cry is uttered by the common jackal when suddenly frightened. As the yelping of a cur when chastised or alarmed differs from its ordinary bark, so the cry of the Pheeal is only heard when the jackal is alarmed. Twice have I heard it: once when a leopard sprang at a jackal which was helping itself to the remains of a goat slain by the former, and once when a tiger put in a sudden appearance under similar circumstances; and again when General Blake was watching over a cow killed by a tiger, with a Mr. Barry, a tiger trotted up and interfered with the proceedings of the jackal, which went off with its tail between its legs, uttering the cry of the Pheeal.

F. T. POLLOK.

JACKAL COURSING—The jackal leaves scent enough for fox-hounds, but where none are kept it can be coursed in the same way as the fox. Only it never doubles, so more dogs may be used, and they are necessary for killing it, as it is the stronger animal. When overtaken, he will sometimes fight savagely, sometimes pretend to be dead, and only by touching the eyeball with the finger can it be ascertained whether it is feigning or is dead. If feigning, it will lie still till the hounds are at a safe distance before stealing away.

JAGUAR (*Felis onca*)—The **Jaguar** inhabits certain portions of the American continent extending from the Southern States of North America through Mexico, Central America, and Brazil to Paraguay. It is a fierce, untamable beast, somewhat resembling the panther, but larger. The spots or rosettes are also larger, and more symmetrically arranged, each group consisting of a ring of well-defined spots enclosing a space somewhat darker in tint than the ground colour, in which the lesser spots often occur.

Melanoids exist, but are not very common; those that live in gloomy forests being far darker than those found in more open country.

The favourite haunt of the tiger in the hot season is a cool sheltered portion of a bheel, and the jaguar not only delights in water, but actually, when hard pressed for food, will wade into streams and with a dexterous pat will eject passing fish on to the bank and devour them at leisure. It is to a great extent arboreal in habit, and an adept at climbing, and by means of the claws alone will run up the smooth bark of a tree devoid of branches to a considerable height. When hunted it takes refuge in trees, and this habit is well known to hunters, who pursue it with dogs and pot it when treed.

Some jaguars from Mexico have the small spots, which ordinarily constitute the rings, at a considerable distance from one another, so that complete rings or rosettes of spots only occasionally appear.

JAGUAR.

Measurements—Max. length from head to tip of tail, 9 ft.; av. length, 7 ft.

The skull differs from that of other large cats in the presence of a well-marked tubercle near the middle of the inner side of the socket of the eye. The total average length of a jaguar is from $6\frac{1}{2}$ to $7\frac{1}{2}$ feet, of which the tail occupies about 2 feet 2 inches.

It is a noisy animal, roaring much by night, especially before bad weather. Like other cats, it delights to sharpen its claws on the bark of certain trees. It rears itself up and, pressing the breast against the trunk, it claws at the bark on either side. A common method of ascertaining if a jaguar is in the neighbourhood is to examine the trunks of the trees. This is also a usual habit of the tiger and leopard in India. The object of the practice is to tear off the ragged ends of the claws, and not, as is generally supposed, to sharpen them.

The jaguar is found even in the Pampas, a place totally unfitted to its ordinary habits; it has been tempted, by the abundance of mammalian prey, to colonise that cold, treeless, and comparatively barren desert.

The cry of the jaguar cannot be described as a roar; it is loud, deep, and hoarse, and has been compared to a series of repetitions of the syllables "pu, pu, pu." From two to four cubs are produced at a birth towards the end of the year.

The mode of hunting them differs in accordance with the seasons and the locality. During floods, especially along the banks of the Parana River, the hunters proceed in boats, searching

for the claw marks, and as soon as they discover a forest which these cats inhabit, some watch, whilst others of the party make a circuit with a few dogs. When the animal is started, they follow in hot pursuit. If the ground is sufficiently open, they use the lasso; otherwise, they drive it up a tree and surround it with the dogs, whilst the hunters with the guns come up. Often the similarity of the markings between the foliage of the forest and the jaguar puzzles the huntsman, as the animal crouches along a branch heavily fringed with leaves. Even if shot dead, it often remains pendent for a considerable time. Now and then, if only slightly wounded, and at no great height, it drops down on to the men and dogs and dies fighting. When encountered in open and ridable ground, it has no chance, and is easily lassoed, and if once, so hunted, it manages to escape, its dread of the lasso is so great, that it has been known to prefer being suffocated by fire rather than face its enemies armed with that instrument.

It is generally affirmed that tigers are accompanied by jackals, and doubtless those unclean beasts follow for the sake of any offal they may collect off the remains of their larder, but they remain silent until their feast begins. Not so with the foxes that follow the jaguar; they annoy it by their constant yelping, and often give warning to its prey.

The cause of the enmity between the puma and the jaguar is a mystery. Where the capybara is plentiful, there is ample food for both; but, odd to say, though the puma is an animal considerably inferior in size and power, it is the persistent persecutor of the jaguar, following it about, and when an opportunity occurs, springing upon its back and inflicting terrible wounds with teeth and claws.

As there are man-eaters among leopards, panthers, and tigers, so there are man-eating jaguars; and when the country is flooded, and their food, in the choice of which they are not particular, difficult to procure, they often prey upon men, preferring the black to the European. They often kill more than they can eat, and out of a party of thirteen men which accompanied a friend of mine, three were killed in one night.

It is also curious that whilst the flesh of the puma is considered a delicacy, that of the jaguar is never eaten, except under dire necessity. The flesh of the puma tastes like veal; that of the jaguar is rank to a degree, yet both are carnivorous.

The following extracts from a journal in my possession may be interesting :—

"Later on in the day, as we passed a heavy bush, a jaguar sprang upon one of the men's horses, embracing him and fastening his jaws in the poor brute's windpipe; down came horse and man. I sprang down and was going to the man's assistance when our headman galloped past as hard as his horse could go, and, shortening his bola as he swept by, gave the jaguar a blow that could be heard a long way off. I thought the brute's head must have been broken in two, but after it had struggled for a moment on its back, and was just clear of the horse, the same man returned at full speed, cast the bola with unerring aim and had the jaguar entangled and helpless, and, in a few minutes, more than half strangled. Two men dismounting soon put an end to the struggling animal. The horse was dead in a few minutes, for his jugular had been severed. The jaguar measured 7 feet 3 inches in length. On another occasion I had just entered the forest from the river bank, and had not penetrated far when I saw a jaguar stalking some animal, so I stepped behind a tree and waited events. As the brute passed through some longish grass, I saw some animal spring on to the jaguar's back; over they rolled, and in a moment the assailant had cleared itself and disappeared. The jaguar rose foaming from the mouth, and, as nothing further was to be expected, I put a bullet through his head. My people hearing the shot hurried up, and, on examination, we found the beast's back badly scored and bitten. The men said at once that it had been done by a puma; but, though I searched everywhere, I failed to find it."

In parts of South America the Indians kill jaguars by means of a blowpipe and poisoned arrows. The poison used is the wourali. They kill even the tapir with these tiny darts. The poison does not affect the meat; the portion round the wound is cut off and the rest eaten. Death takes place in a quarter of an hour, but within a few minutes the animal becomes drowsy, seems to be in no pain, and expires quietly and gradually.

F. T. Pollok.

JOCKEY CLUB—[*See* Racing].

KANGAROOS—When English attention was first drawn to the peculiar Flora and Fauna of Australasia, their novelty was the chief occasion for comment and curiosity. They were interesting because they were unlike anything in our previous experience. But science soon learnt to dwell on the real antiquity of much that seemed so new. Observers and inquirers were not long, for instance, in noting that the *Zamia spiralis*, still so frequent in the neighbourhood of Sydney, was closely akin to some of the earliest forms of fossil vegetation. The Port Jackson shark again, *Cestracion phillipi*, with its curious rasp-like rollers for crushing shell-fish, was found to claim near kindred with some of the earliest fossil fishes.

The Marsupiates of Australasia are so closely mixed up with modern pastoral interest, that I hold myself at liberty to speak of them only from the squatter's point of view. They are, in fact, formidable enemies to the vast wool-gathering

interest which maintains, I think, something like forty sheep for every man, woman, and child in Australia. They have, moreover, been greatly favoured by local changes. The "black-fellows" who were clever in killing them, have become a pitiful remnant, unless in the extreme North West. The warrigals—those voracious wild dogs who helped to keep them as well as the sheep down—have become very scarce, baits seasoned with strychnine having disagreed with them. Perhaps, too, station life has become more purely a matter of business, and is less seasoned with sport than in the days when my long circuits were enlivened by an occasional halt at some hospitable mansion, where the kangaroo dogs were an institution. Quite apart from the question of keeping down the kangaroo population, the *chasse* is of peculiar interest and well worth witnessing. The speed attained by the quarry in a regular succession of bounds, which forms his mode of progress, is sometimes extraordinary, particularly when the lighter limbed female is the fugitive. I have known an "old man" cover 19 feet at each bound for full half a mile, but his pace was not particularly fast. Moreover, the male is somewhat pugnacious, and often, instead of doing his best to escape, is meditating reprisals on the dogs. If he reach a convenient water hole, especially one affording a tree against which he can lean his back, they may catch a Tartar. Short as are his fore legs, his hug is formidable, and if his position be such that he can keep his balance, while lifting up a muscular hind leg, his strong horny toe cuts like a knife, and goes near to bisect his enemy. The same thing often happens when an eager young dog catches and throws his game, but receives a kick which is almost equal to that of a horse. The flying doe, however, as the adult female is termed, has no purpose of showing fight, but only tries to escape by speed. I have never had the opportunity of measuring her successive bounds on sand, but believe they average full 20 feet. I remember pressing one very hard over level ground, when well mounted and with a brace of excellent dogs. I counted on a kill, but just when she seemed to be out-paced, she took from her pouch a "joey," about the size of a large cat, and tossed it away from her line of flight. From that moment she left dogs and horses behind, went straight away, and doubtless, after tiring out her pursuers, duly retrieved her bantling. Indeed, the number of kangaroos coursed and fairly run down cannot be great. A few are shot, a very light charge sufficing if they are hit along the course of the spine. But dogs and guns are merely palliatives to a great evil.

When we consider that there are something like a hundred and ten millions of sheep in British Australasia, an army of rival grazers must be dealt with wholesale. And this is done by a grand drive, generally, I think, in the direction of Port Fairy, lying to the extreme south of Victoria at the end of an extensive range of valuable sheep pasture. A long double line of fencing opening to a great width inland, but converging as it nears the coast, is constructed to receive the driven kangaroos. The principle is the same as that adopted by the Indian Government in the construction of the keddah for the capture of wild elephants. A sort of funnel of fencing is, in fact, erected, wide open inland, but narrowing gradually as it approaches the spot fixed for the final capture. It will, however, be seen from the immense numbers of the game to be enclosed, that the scale of this kangaroo-trap is vastly greater than anything that can be required in the taking of elephants. There is another difference very distressing, if we must not say cruel, to the

KANGAROO.

driven kangaroos. The enclosure in which the elephants are finally secured is made strong, that there may be no risk of the captives breaking out, and a mighty barrier of timber is opposed to their attempts at escape, backed by a show of fire wherever a sally appears to be threatened, and by the trained manœuvres of tame elephants, who mingle with the wild ones, and subdue them one by one, by the joint action of force and guile. But the enclosure into which the kangaroos find themselves finally driven is formed, not to capture and subdue, but simply to destroy them. They descend in their thousands, down a treacherous slope into a deep hollow, from which, as from the lion's den in the fable, there are no back-

ward tracks. They are there simply to be killed. One would like to know what provision, if any, is made for utilising the carcases of the victims. Kangaroo skins make excellent leather, and I remember "in my hot youth when George the Fourth was king," fancying that boots made of it were elegant as well as comfortable. Then there is a great amount of human food available where kangaroos are slaughtered by the thousands. The tails alone, sometimes very heavy, supply a soup equal to ox-tail, and ought to sell well among tinned meats. A half-grown kangaroo also supplies excellent cutlets taken lengthwise from the large muscle on each side of the spine, quite equal to those sliced from blue hares after shooting a Highland hill.

I must mention that I recognise three large species of kangaroo on the continent of Australia as specially worthy of the sportsman's notice. First there is the Great Red Forester, which I am sure I have seen sitting erect not less than 7 feet high. Next in size comes the Grey or "Blue" species; more particular, I think, about its pasture, and thus a worse enemy to the sheep owner. Thirdly there is the Wallaroo, a dark-coloured, rough-haired inhabitant of craggy hills, heavier in the arms and shoulders than the other two, and rather like a bear when seen erect against a background of rock. I have toiled to get a specimen, but was always baffled by the cunning "old men." Once I succeeded in shooting a doe, but only recognised her species on the authority of a highly scientific naturalist. She was a smooth, blue creature, weighing only some 12 or 13 lbs. In fact, throughout the kangaroo tribe the male has an immense superiority in bulk and strength, though decidedly inferior in speed, even allowing for the combative temper which often inclines him to imprudent resistance. I knew a case near Wagga Wagga where a heavy "old man" turned on two mounted pursuers, and leapt up successively behind their saddles, tearing their coats nearly off their backs, and utterly scaring their horses, who, like Gilpin's, "never in such sort had handled been before."

I must invert rational order to remark finally that Halmaturus, "tail-jumper," is an absurd scientific misnomer for these leaping quadrupeds. The kangaroo, when grazing, may be said to walk with his powerful tail, which he bends under him as a lever to lift his hind quarters gently forward. But when it comes to a question of jumping, he keeps it carefully off the ground, flourishing it aloft with an effect which in a large mob looks highly comical. I believe, however, that this flourish has some useful result in steering his course. Be that as it may, he is most careful when hunted to keep it high and dry; if once draggled, it shortens his stride and cripples his pace. It was my ill fortune to be travelling on duty during the heaviest rain I ever encountered even in Australia. A fall of fifteen inches within three days had laid the grand level expanse of the "Old Man Plain" under water, and I saw before me a drive of more than twenty miles through an inland sea. On the last slope of the higher pasture-land which I was reluctantly leaving I saw a huge male kangaroo in utterly helpless plight, crawling rather than hopping, while his tail dragged piteously through the wet grass like a rope trailed behind a vessel to check her speed. A lady's lap-dog could have overtaken him. Thus, when I claim for the kangaroo—and especially for the stately Red Forester—a wonderful "turn of speed," I do so "with proviso and exception" on several grounds. He—or rather she, for the ladies are the fast sex—must not be called on to cross a wet meadow, or to scale a rocky slope, or even to travel at high speed across a level thickly strewn with loose stones, where the troop make much clatter but small way. From one hindrance or another, kangaroos seldom run "their level best," and can seldom stand long before dogs of the right breed, wire-haired, hard-footed, long in the stride, and in all essentials identical with the noble Scotch deer-hound. Indeed, I should like to see them hunted at less headlong speed, and with the classical accompaniment of a "musical pack."

H. R. Francis.

KANGAROO-SHOOTING — The kangaroos and wallabies, which, if not perhaps the typical, are at any rate the most widely known of the great marsupial sub-class to which they belong, are, however interesting they may be to the student of the mammalia, familiar to the colonial chiefly as a plague to the stock-owner. The larger kinds, those in particular which frequent the plains, move so rapidly from place to place, and are so insatiable in their appetite, that they quickly over-run whole districts, their scissors-like front teeth cropping the herbage so close as to leave no meal for anything superior to a rat.

To cope with this evil, farmers in those parts organise drives on a generous scale, in which the flying beasts are done to death in their thousands, either hunted with kangaroo-dogs in the more sporting fashion described above by Mr. Francis, or driven in dense masses into enclosed stockades and there butchered with anything that comes handy—shot so long as the cartridges hold out, clubbed with the butt afterwards.

The visitor, however, who seeks in the course of his colonial experiences as much sport as can be got out of the pursuit of such timorous, inoffensive game, will elect some less wholesale means of finding his kangaroos, and, if he does not object to penetrating as far as the back blocks—the vast flocks of other days have long

since deserted the neighbourhood of the populous centres—there is the choice of stalking most of the larger kinds in the plains (no easy performance for any one out of condition), or seeking the red kangaroo and smaller wallabies among the rocky boulders that, to the wonderment of the new arrival from England, strew the landscape in every direction.

Rock Kangaroos and Wallabies—The shooting of these animals among the rocks is a simple matter, and may be dismissed in few words. It is scarcely necessary for purposes of the present article to enumerate the dozen or more species found in such rocky country, beasts ranging in weight from 200 lbs. down to 20, their measurement from nose to root of tail varying between 60 inches and 30. What chiefly concerns those who would find them is the marvellous protective colouring with which, without exception, they are endowed. So closely indeed do the tints of many harmonise with their surroundings that I have more than once, when stalking one herd upwind, all but trodden on the outposts of another squatting motionless among the rocks. This similarity of colouring to the background is not perhaps shared, to quite the same degree, by the kangaroos of the plains, though there is at first some little difficulty in descrying them at even a short range on the sand, no unusual framing in that parched continent.

With the cover afforded by the rocks, there should be, where the beasts are at any rate plentiful, no great difficulty in bagging them: and it is amusing to take note of the strange miscellany of fire-arms that are taken out for the purpose. Shooting is a far more rough and ready affair in the Australian colonies than at home, subject to no restrictions and hedged by few etiquettes. Neither gun- nor game-licenses trammel the sportsman, or neither were at any rate enforced when I was there, in consequence of which only those were prevented from shooting who could not muster some kind of gun. These were few indeed, and the members of the party usually turned up with as many kinds of weapon, from the newly imported ·303 Magazine rifle (the weapon I would above all counsel for the work) down to the duck-gun and even the "converted rifle," a formidable article which I believe the Government sold for a few shillings, and which threw a good foot to the right or left when fired. Owing largely, no doubt, to the antiquity of some of the battery, as well as the carelessness with which they were handled, there was invariably a competition for last place in the file.

The procedure depended upon whether we were shooting over dogs—by far the most enjoyable, as also the most productive, style. Without dogs, every one crept away on his own beat and blazed at everything that came within range. If there were dogs, however, each gun was allotted a position near some high rock, and the hounds were sent on ahead by a circuitous route and then drove the frightened beasts back past the guns. It depended on the nature of the country whether the rifle or shot-gun had the better time of it: in the general way, the chances lay with the former, but when, as occasionally happened, the rocks were very close together, the shot-gun got a hurried shot at a flying wallaby close at hand and a few pellets brought it down. No beasts of the same size, few, indeed, irrespective of size, take less killing, and a blow from the handle of a stock-whip is sufficient to kill a doe of the largest dimensions. As the wallabies are keen-sighted, all that is necessary, when waiting for the dogs to drive them past, is to remain motionless and in readiness to take a pot-shot at the shortest notice, for these creatures are as silent in their

WALLABY.

movements as they are swift, and only at the moment of their coming within close range are the rhythmic beats of their hind feet audible.

Stalking in the Plains—Without the aid of the cover of rocks, and, as often as not, in the full glare of a sun that can, even in mid-winter, make itself felt to the European at an early hour of the morning, the pursuit of the kangaroo, in which there is no danger to attract and but the very poorest skin by way of trophy, is not likely to recommend itself except for the one trial necessary to all new experiences. A moment's contemplation of the larger kangaroos, even in captivity or the museum, will suffice to convince the visitor that such creatures, tall, with large eyes and sensitive ears to acquaint them with all that is going on around, without any means of defence (except the powerful hind nail) to encourage indifference to danger, and with a rapid and eccentric mode of progression by leaps that in the larger species cover twenty

feet at the least, are by no means the easiest to stalk, nor does the afore-mentioned resemblance of their colouring to that of the sandy earth make matters simpler. Even when there is a strong wind blowing, there are often unforeseen complications, not the least among which is the sudden change in its direction so characteristic of at all events the North Queensland plains, where I have followed these beasts by the hour, or maybe the abrupt appearance of a morass, the result of an overnight downpour, that either causes a sudden disturbance and the consequent warning of the kangaroo, or a *détour* of such a nature as to make it impossible to keep the game to windward. As they take the scent as quickly as most browsing animals, a moment is fatal, and in a few leaps they once more put between them and their pursuers as much ground as was gained in the previous half hour's stalk.

So much has already been written in these pages on the subject of stalking deer and other game, that it is only necessary in the present article to lay stress on the necessity for a thorough acquaintance with the ground to be gone over, more particularly in the immediate neighbourhood of rivers, beside which, for example, when their steamer is taking in cargo, those who visit the colonies have most of their opportunities for kangaroo shooting.

The islands that a prolonged drought unites to the mainland are excellent kangaroo ground, but, on the other hand, their soil is most treacherous, and, as already mentioned, a single tropical rain of only a few hours' duration is sufficient to convert a plain as hard as iron to a quicksand capable of swallowing, or at any rate detaining, both the kangaroos and their pursuers.

The shrieking ibis, which are flushed at every dozen yards, especially in the late summer, are also a great nuisance to the stalker, though, mercifully, the kangaroo sometimes pays no attention to their warning cries.

The ·303 Magazine rifle has already been recommended for the work, and it would, in fact, be hard to beat.

On the natural history of the kangaroos and wallabies, of unequalled interest among mammals to the biologist, it is unnecessary to dwell in any detail. The earlier fables in respect of their reproduction have long since been refuted; and we now know that the young one is born a month or two after Christmas, after a very short period of gestation (and without any pre-natal connection with the dam) in a perfectly helpless condition; is conveyed by its mother to her pouch immediately after birth, and is there nourished, the milk being pumped down its throat, until able to shift for itself, which it does in the course of ten months.

The kangaroos, indeed the marsupials generally, are the most primitive type of mammals, Nature's earlier attempts at fashioning the now predominant class. They cannot, however, be said to furnish sport of a very high order, although those who visit the colonies will scarcely miss an opportunity of experiencing the novelty of shooting at quadrupeds that leap more after the fashion of frogs than of any other living creature.

F. G. Aflalo.

KNURR AND SPELL — This game is scarcely known in the southern counties, but has some share of popularity in the north. It is not difficult to acquire, as any one possessing a good eye and a ready hand can soon become a proficient. It consists of a man striking a ball in a given number of strokes as far as possible.

The requisites for the game are a bat, a trap, and a ball. The ball, which should be about one and a half inches in diameter, is made either of wood or porcelain. The bat is made of a piece of good hard wood, like a pint bottle split in two longitudinally, attached to a long handle of stout cane, which varies in length from four to five feet, to suit the height of the player, who, holding the bat by the extremity of the handle in both hands, releases the trigger of the trap and catches the ball, if possible, in the centre of his bat, and drives it as far as he can. The spot where the ball pitches is marked, and its distance from the trap measured. His opponent then tries his hand, and so on, to any number of players, until the agreed number of strokes have been made. The number of feet each has covered are then totalled, and he who has aggregated the most is the winner. There is a great deal of acquired knack in this game, but he who hits high will send the ball further than he who drives it horizontally. Hit the ball at an angle of 45 degrees with the plane of the horizon. This may be roughly done thus. Stretch out the arm at right angles to the body, then lift it straight above the head, then let it drop to a position midway between these two positions and you will have the angle required. Hit well up and you will get as much as it is possible to do each time.

F. T. Pollok.

KOODOO — The **Koodoo** (*Strepsiceros kudu*), though surpassed in size of body by the eland, may fairly be regarded as the handsomest of all the antelope family. Its great spiral horns form a trophy of which every hunter, who has the chance, desires to become possessed. So keenly is this noble animal pursued, that there is, in the writer's opinion, danger of its ultimate extinction unless the great Powers who are colonising Africa are mindful of their obligations in this respect, and provide sanctuaries for its preservation, or make stringent rules against the excessive slaughter of the bulls by sportsmen. The females very rarely carry horns, and there-

fore, except for meat, do not offer the same temptation as the males. The northern limit of the koodoo is the river Atbara in the Italian Abyssinian colony. From this point southward it is found throughout East Africa as far as the Transvaal, wherever the nature of the ground is suited to its habits. It almost invariably frequents dense thorny scrub, and it generally affects the sides of ravines, or steep and lofty mountains, so long as these are not barren. Living in such jungle, the koodoo relies chiefly on the acuteness of its hearing for protection, Consequently it is endowed with immense ears. comparable to those of the elk in the northern hemisphere, which is an animal similarly protected, and for the same reason. In searching for the koodoo it is these large leaf-like ears, fully ten inches in length, which first catch the eye, and which, together with the handsome fringe of hair on the throat, helped to give it its air of distinction and intelligence. The colour of the skin resembles that of the pale dun breed of Jersey cows, but white vertical stripes on its flanks, and crescent marks between the eyes, in imitation of the lines and patches of light in a thicket, help to break up and render invisible the expanse of grey hide. The animal, which is as large as a fourteen-hand horse, would otherwise be too readily discovered by its enemies.

From Ward's horn measurements it would appear that the longest heads have all been brought from south of the Equator. The horns gradually diminish in size as more northern latitudes are reached. The writer obtained a bull in Somaliland whose horns taped fifty-two inches following the curve, and forty inches from tip to tip, and these measurements have rarely been exceeded in that country, whereas many heads of sixty inches have been obtained in South Africa, and one of sixty-three inches. On the other hand no recorded heads from Abyssinia reach fifty inches.

Unlike many of the African antelopes, the koodoo is a tolerably frequent drinker, and, except in the rainy season, when his food contains abundance of moisture, must be sought within a few miles of water.

It aims at escaping by concealment, rather than by fleetness of foot, and it is said that a koodoo desiring to escape observation will lie almost as close as a rabbit when it knows itself to be well hidden, and will allow a man to pass within a few yards without moving. The alarm note is a "bark," somewhat like that emitted by a red hind, but louder. It is generally the females who give the warning signal. A thin-skinned and tender animal, the koodoo does not, like the oryx, carry away much lead. The first bull I saw offered a long running shot, and I consequently hit him far back. Finding the blood spoor, I insisted, much to my Somali's disgust, on giving him time, always the most prudent course in such circumstances. When we did ultimately take up the line, we found that he had not travelled more than 150 yards after receiving the shot. Almost any other antelope with such a wound would have got clean away. My largest bull, above referred to, fell instantly to a single ·256 Mannlicher bullet. But I must not be understood to recommend that weapon, admirable as it is in the open, for an animal which may require to be tracked in thicket and over strong ground. In such a case, where the blood track

KOODOO.

Av. height at shoulder, 52 *in.*; *Av. horn measurement*, 43 *in.*; *Max. horn measurement*, 63 *in.*

is all important, a rifle which will inflict a larger wound should be used.

No description in words can convey an impression of this animal, its habits and surroundings, so vivid as Mr Millais' admirable drawings in *A Breath from the Veldt*. To those who have the good fortune to possess that work, I commend the careful study of the pictures in pen and pencil of that close observer and good sportsman. I may sum up his impressions of the koodoo in his own words. "The sable will stand and stare at you, quite close sometimes, as much as to say, 'Who the devil are you?' The koodoo will creep under the shadow of a bush and hope to goodness gracious you won't notice him, but the roan will say 'good-morning' as soon as he sees you." Mr. Selous' works should also be consulted on the

habits of this animal and the conditions for hunting it successfully.

For koodoo hunting in Somaliland, the chapter in Captain Swayne's work dealing with this subject is full of suggestive observation. He remarks that the hunter who secures one good head in a fortnight's hard work in the mountains may consider himself fortunate. It must be remembered that the best koodoo ground in that country, namely the Golis range and Gadabursi Mountains, is now comprised within the limits of the area reserved for the use of the Aden garrison. Some information with regard to the animal in Abyssinia may be derived from Baker's *Nile Tributaries,* and *Life with the Hamran Arabs*, by Myers.

THE LESSER KOODOO (*Strepsiceros imberbis*) is almost identical in appearance with the greater animal of the same name, but is on a far smaller scale, its size being less than that of a fallow deer. Its dorsal and flank stripes are more sharply defined, and it has two crescent marks on the throat, which are wanting in the typical species. The white, semi-transparent points of the dark horns are another special characteristic. This antelope has the most refined and high-bred air of all African animals, and a well-mounted head is a trophy to be coveted for its intrinsic beauty.

This koodoo has a much more restricted habitat than its larger congener. Unlike the latter, in my experience, it avoids steep ground, and is to be found in valleys or flat plains at the base of mountains, but always in thick covert. Wherever the low, pointed aloe abounds, or the green fleshy-leaved *ergin*, there may the *Godir*, to quote the native name, be sought, with good hope of success, always provided that it is not too far removed from water. The hunter who desires success must be gifted with great keenness of vision and quickness of hand and eye, for it is generally a question of a snap shot or none at all. The writer, who is deficient in the above qualities, allowed several good males to escape him, either by failing to see them in time, or by egregious bad shooting, before he annexed a fair specimen. This koodoo seems to have the instinct to stand or feed always in the shadow. Once aroused, there is one flashing bound over a bush, his white tail waving a parting flick, and, unless this brief opportunity be seized, he is not likely to afford another chance. Notwithstanding the difficulties attending the chase of this watchful beast, large numbers are killed by Midgans, or low caste Somalis, who use only a bow and poisoned arrows, but are expert and patient hunters.

E. N. BUXTON.

LACROSSE—History of the Game—Catlin, and other early travellers amongst the North American Indians, found the game a firmly established institution; and the seriousness with which preparations for a great game between tribe and tribe would be undertaken, and the fierceness with which the play was conducted, were second only to actual warfare. Large stakes in kind were risked upon the issue of a game, and the women were privileged to urge their husbands on to increased exertions by the application of switches to their backs. The game bore a different name in the language of each tribe, and the implements used for carrying and throwing the ball also varied materially in shape. As the Indians became tame, and sought the shelter of towns, they brought their game with them. The white population were not slow to take to lacrosse; and it is on record that some Canadian boys introduced crosses into a school at Reading about 1865. In 1867 a team of Indians was brought to England for speculative purposes, and played at various centres. Their crosses were very unlike those in use at the present day, and no effective throwing could be done, but the game proved attractive and a serious attempt was made to start it. Matters progressed as far as the formation of an association; but the crosses that were made in England were altogether impossible, and the effort died out.

Implements of the Game—Lacrosse is a decidedly difficult game to learn, and this fact will always militate against a widespread popularity. The *crosse* (La Croix, the Bishop's

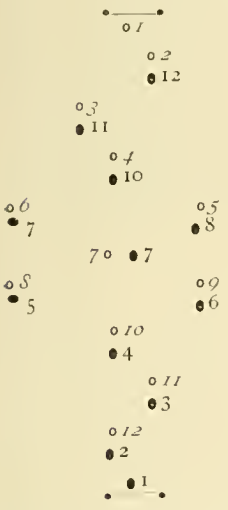
THE CROSSE.

crozier, is the origin of the title) is formed of a piece of wood, hickory for choice, having one end rounded and the other flattened. The flattened end is curved to form a bow (the *bend*) some 8 or 9 inches across, and from the top of the curve to the other end (the *butt*) is about 4 feet 3 inches. A strong piece of gut, the *leading string*, is tied from the extreme end of the curve, the *tip*, down to a point eighteen inches or more from the butt, called the *collar*. The space intervening between the leading string and the back of the crosse, which is cut with a perfectly straight face on the inside, is meshed with gut. The leading string is then joined to the *face* of the gut by means of other pieces of gut, and the crosse is complete. The *ball* used is of india-rubber sponge, specially constructed to eliminate danger as far as is possible, measuring between 8 inches and $8\frac{1}{4}$ inches in circumference, and weighing between $4\frac{1}{4}$ ounces and $4\frac{1}{2}$ ounces. The object of a side is to throw, or otherwise pass the ball through the adversaries' *goal* by means of the crosse, and goals are the only

points that score. Each goal is six feet square. Formerly it consisted of two uprights merely, it being thought impossible to use a cross-bar because of the hindrance it would cause to the goal-keeper's crosse; but English players discovered that it was quite feasible, and now matches are played with the cross-bars from pole to pole, whilst a net is spread behind. Thus it is very difficult for any error in umpiring to occur, and the frequency with which the cross-bar is hit shows how often a doubtful goal might be given by an umpire. The goal stands in a *goal-crease* 12 feet square, into which no opponent may enter unless the ball be there.

The Players—Twelve players make a full team, and they are divided roughly into *attack* and *defence*. There is no off-side, but the ball

PLAN OF LACROSSE FIELD.



1, 1, Goal.
2, 2, Point.
3, 3, Coverpoint.
4, 4, Third man.
5, 5, Left defence field.
6, 6, Right defence field.
7, 7, Centre.
8, 8, Right attack field.
9, 9, Left attack field.
10, 10, Third home.
11, 11, Second home.
12, 12, First home.

may not be handled by a hand not upon the crosse. The players distribute themselves all over the field after a fashion which experience has shown to be the best, though slight variations are indulged in. One attack player, *First Home*, is placed near the opponents' goal in a position from which he may reasonably hope to shoot a goal should the ball reach him. A little farther out, and to one side, is *Second Home*, and still farther out and again on the other side, *Third Home*. The positions of these players, when the attack waxes brisk, are practically interchangeable, especially as play goes on behind the goal as well as in front of it. The three *Homes* must be adepts in taking short and hard catches with absolute certainty, and getting in their shot at goal without the least delay. Forty yards or fifty yards away from the goal, and wide on either wing, stand the two *Attack Fields*, and in the middle of the ground is the *Centre*. Then, in corresponding positions on the other side of Centre, come the two *Defence Fields*, whose duty it is to check the opposing Attack Fields, after which, nearing the goal, come *Third Man*, checking Third Home, *Cover-point*, checking Second Home, and *Point*, checking First Home. In either goal-crease stands the *Goal-keeper*.

Hints on Play—Properly held, the crosse is grasped by the butt in either hand, according as the player plays from the right or left side. With the ball on the ground, the player runs towards it, lowering the bend of the crosse as the ball is reached. The momentum causes the ball to run up on the netting, and the knack of controlling it there is one of the preliminaries that have to be learned. Next come *throwing* and *catching*. Throwing is executed by a swing, or sweep of the crosse, modified according to the desired magnitude of the throw. It is most easily done sideways or three-quarter face to the player, and correct throws are made along the back of the crosse. When the throw is thus made, the ball will infallibly travel in the direction in which the crosse is pointing when arrested at the completion of the throw. In catching, the *face* of the netting must be presented as much at right angles to the line of flight of the ball as circumstances will permit. As the ball comes at all sorts of angles and often at a high rate of speed, herein lies the difficulty of catching. Very high flying balls are best stopped in their flight, and caught on a horizontal crosse as they fall. One difficulty that has always raised great trouble has been the tendency of the ball to run up the netting and out of the crosse *via* the narrow part, the *angle*. In September last the Unions of England and Ireland sanctioned the use of a piece of gut, the *cross-string*, tied tight across the angle, so as effectually to prevent the ball running any farther. A properly made crosse of ten years ago did not need this, but manufacturers have continually altered the fashion of the netting, with the object of making the game easier, and the adoption of the cross-string has become unavoidable. It materially facilitates *dodging*, as the crosse can be held in a nearly perpendicular position without the ball being lost. Dodging, though strongly to be deprecated when carried to excess, is a necessary feature of the game. In its simplest form the crosse, with ball upon it and held horizontally, is waved from side to side, as the player endeavours to pass an opponent, by dashing from right to left, or *vice versa*. Opponents are allowed to strike at the crosse with the object of dislodging the ball, and the best way of preventing this is to wave the crosse about. Sometimes an opponent may be dodged round, and to do this the player must make a complete turn upon his axis. To effect this and not lose the ball the butt hand must be lowered and the bend raised.

The act of a defence player in stopping the progress of an opponent or preventing his throw is known as *Checking*. When a player is dodging,

no notice should be taken of his crosse, the *Checker* simply taking care to place his body in the way of the dodger. This is known as the *body check*, and no force may be imparted to it, or it becomes a charge, which is forbidden. Body checking is of most use out of the field. Near goal the attacks will be trying for shots at goal, therefore their crosses must be attended to. It may be assumed that, if a *Home* is given but half a second in which to make his shot at close range, he will score, in spite of the *Goal-keeper*. The business of the three defence men nearest goal must, therefore, be to keep the *Homes* at a respectful distance. If this is done, their shots will come easily to the *Goal-keeper*, though it is doubtful if they will shoot at all at long range. If the *Homes* elect to stand close in, *Point*, *Cover-point*, and *Third Man* must attend to their crosses very closely, beating them down and letting the ball go on for *Goal-keeper* to gather. But *Second Home* and *Third Home* cannot stand in very close without destroying the unity of the team, each member of which must operate in a certain area. The greatest latitude is given to *Centre*, who must be an untiring player, for he acts alternately on defence and attack.

The game is started by the ball being placed on the ground in the exact centre of the field of play; the two *Centres* stoop down and place the backs of their crosses on either side of the ball, and at the word "play," or the blowing of a whistle, the crosses are drawn smartly towards

FACING.

the holders of them. The ball comes to one or the other, is pounced upon, and the game has begun. The essence of attack play is quick dashes in the proper direction, but not an inch farther than is necessary to get a player in a favourable position clear for a *pass*. Thus, a quick runner is of great use, provided he be not one who holds the ball too long. Making quick passes when the player is in rapid motion is not easy, and every variety of throw must be learnt. When the ball has been worked into a position favourable for a shot, the greatest

GOAL-KEEPER.

chance of scoring lies in a ball that strikes the ground a few feet in front of the goal-keeper. At very close range a shot over his shoulder is the most effective. Very fast throws have to be judged, for often the ball cannot be seen. Shots that come rather low and off the ground should be beaten down and then got away; very low shots should be *blocked* with a nearly vertical crosse, *bend* downwards.

Point, *Cover-point*, and *Third Man* should be good throwers, for though it is better to pass the ball down the field, this is by no means always feasible, and in this case the ball is best thrown down to reach *Third Home's* position. To throw farther is to throw too far. When an *Attack Field* or *Centre* runs up with the ball, *First* and *Second Home* should spread out somewhat, and so give him a clear run. Presently one of the defence must go to meet him, thus leaving a *Home* free for a pass. Only rarely should *Attack Fields* run far past the centre: *Point*, *Cover-point*, and *Third Man* never. If the game is going against a side, the tendency is to bunch on defence, but this should be fought against, for by giving way to the impulse all possible chance of scoring is removed. The only man who should go back at all is *Centre*, on the chance of the ball coming to him.

For a long time matches between England and Ireland and the North and South of England have been annual fixtures. The match between England and Ireland presents difficulties, be-

cause in England the game is played in the winter, owing to the popularity of cricket and other games, whilst in Ireland, as in Canada and the United States, summer is the playing season.

E. T. SACHS.

LAWS OF THE GAME.

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I. THE CROSSE.—Sec. 1.—The crosse may be of any length to suit the player, woven with raw hide or gut—not cord or soft leather. The netting must be flat when the ball is not on it. In its widest part the crosse shall not exceed one foot. A string must be brought through a hole at the side of the tip of the turn, to prevent the point of the stick catching an opponent's crosse. A leading string resting upon the top of the stick may be used, but must not be fastened, so as to form a pocket, lower down the stick than the end of the length-strings. The length-strings must be woven to within two inches of their termination, so that the ball cannot catch in the meshes.

Sec. 2.—No kind of metal, either in wire or sheet, screws, or nails, shall be allowed upon the crosse. Splices must be made with either string or gut.

II. THE BALL.—The ball must be of india-rubber sponge, not less than eight inches and not more than eight-and-a-quarter inches in circumference. It must weigh not less than four and-a quarter ounces, and not more than four-and-a-half ounces. In matches it must be furnished by the home club.

III. THE GOALS.—The goals shall be placed not less than 100 yards and not more than 150 yards apart, unless otherwise arranged, and in any position agreeable to the captains of both sides. The posts must be six feet apart, and the tops thereof, including any ornament, must be six feet above the ground. In matches they must be furnished by the home club. Goal nets may be used if agreed to by both captains.

IV. THE BOUNDARIES.—The boundaries of the field of play shall be agreed upon by the captains before the commencement of the match. Should the ball be thrown out of bounds, the referee shall call "stand," and the ball shall then be "faced" by the two nearest players not less than four yards within the bounds at the point where the ball went out.

V. THE UMPIRES.—Sec. 1.—There must be only one umpire at each goal, who shall be agreed to by both captains before the commencement of the match. They shall not be changed during the progress of a match without the consent of both captains. They shall not change goals during a match.

Sec. 2.—No umpire shall, directly or indirectly, be interested in any bet upon the result of the match. No person shall be allowed to speak to the umpires, or in any way distract their attention.

Sec. 3.—The umpire shall stand behind the posts. In the event of "goal" being claimed, he shall at once decide whether or not the ball has fairly passed through the goal-space, his decision being simply "goal" or "no goal." His decision shall be final, without appeal, and he shall not be required to give a reason.

Sec. 4.—In the absence of a referee, the umpires shall assume his functions, as set down in Law VI., each over his own half of the field. One only shall act as time-keeper and starter failing a referee, and this to be decided by tossing.

VI. THE REFEREE.—Sec. 1.—The referee shall be selected by the officers of the competing teams at any time prior to the match. He shall be a disinterested person.

Sec. 2.—Before the match begins he shall see that umpires have been properly chosen.

Sec. 3.—He shall draw up the players in lines, and see that the regulations respecting the crosses, ball, goals, and spiked shoes, &c., are adhered to. He shall ascertain the length of time the match shall last, directly from both captains, and he shall be sole time-keeper and starter.

Sec. 4.—If the referee observes any infringement of the rules, or when a "foul" claimed by any player has been allowed, or in case of injury or accident (Law VIII., Secs. 2 and 3), the referee shall immediately call "stand." If the ball enter goal after "stand" has been called by the referee, it shall not count; or if a foul be claimed by one side and their opponents score a goal immediately afterwards, the referee shall first give a decision on the foul, which, if allowed, shall nullify the goal. If the foul, however, be claimed by the scoring party, whether the claim be allowed or not, a goal scored before the referee has called "stand" shall count.

Sec. 5.—The infliction of penalties (Law XII.) shall be in the province of the referee, without appeal, and any side rejecting his decision or refusing to continue the match shall be declared the losers.

Sec. 6.—The referee shall arbitrate in all disputes between the captains, and his decision shall be final.

Sec. 7.—At the commencement of each game, and after "stand" has been called, the referee shall see that the ball is properly "faced," or otherwise dealt with according to the Laws. No "face" shall take place within 10 yards of the centre of goal when it is caused by the action of an attacking player.

VII. CAPTAINS.—Sec. 1.—A captain shall be appointed by each side previously to the commencement of a match. He shall be a member of the club by whom he is appointed. He may or may not be a player in a match; if not, he shall not carry a crosse, nor appear in lacrosse uniform. He shall be the mouthpiece of his team in all disputes, in which he may be assisted by one player selected by himself, and shall report any infringement of these Laws during a match to the referee.

Sec. 2.—Captains shall arrange, previous to a match, the length of time it shall last, and shall toss for choice of goals.

Sec. 3.—Nothing in this Law shall prevent a player appealing direct to the referee in case of rough or foul play.

VIII. THE TEAMS.—Sec. 1.—*Number.*—Twelve players shall constitute a full team. They must be regular members of the club they represent. Should one side be deficient in numbers at the time fixed for starting the match, their opponents may either limit their own numbers to equalise the sides, or compel them to play with as many as they have.

Sec. 2.—*Injury.*—Should a player be incapacitated from playing through wilful injury or rough play from an opponent during a match, his side shall be at liberty to replace such injured player or compel the other side to take off the offending player to equalise the sides. No change of players may be made after a match has commenced, except in cases of injury during the game.

Sec. 3.—*Accidents.*—Should an accident occur to any player, which, in the opinion of the referee, incapacitates him for playing, the other side *must* put off a man during his absence.

Sec. 4.—*Spiked Soles.*—No player may wear spiked soles under any circumstances. The soles must in every case be india-rubber, if boots or shoes are worn.

Sec. 5.—The players on each side shall be designated as follows:—

1—Goal-keeper.	7—Centre.
2—Point.	8—Right attack.
3—Cover-point.	9—Left attack.
4—Third man.	10—Third home.
5—Right defence.	11—Second home.
6—Left defence.	12—First home.

IX. THE GAME.—Sec. 1.—Each game shall be started by the centres facing at the centre mark, and when both sides are ready the referee shall call "play."

Sec. 2.—A match shall be decided by a majority of goals taken within a specified time. A goal shall be scored by the ball passing through the goal-space from the front not being propelled with any part of the foot or leg.

Sec. 3.—Should the ball be accidentally put through either goal-space by one of the players defending it, by whatsoever means, it shall be counted a goal to the opposite side. Should it be put through by anyone not actually a player, it shall not count.

Sec. 4.—In the event of a goal-post being knocked down during a match, and the ball put through what would be the goal if the post were standing, it shall count a goal for the attacking side.

Sec. 5.—When goal has been claimed and allowed, the ball shall be again faced in mid-field.

Sec. 6.—Ends shall be changed at "half-time," when either side may claim not more than ten minutes' rest; such rest not being counted as occupied in play.

Sec. 7.—The goal-keeper, while defending goal within the goal-crease, may put the ball away with his foot or hand (but not throw it), or block it in any manner with his crosse or body.

Sec. 8.—Any player is "out of play" if he drop his crosse during a game, and may not touch the ball or impede an opponent in any way until he recovers his own crosse.

Sec. 9.—Any player is at liberty to propel the ball with his foot or leg.

Sec. 10.—A match is ended by the referee calling "time."

X. FOULS.—Sec. 1.—No attacking player shall stand within the goal-crease, or check the goal-keeper within it, until the ball has passed within the bounds of the goal-crease. This shall not prevent a player from running through or across a corner of the goal-crease to field a wide ball. Each umpire at his own goal shall decide these points.

Sec. 2.—No player shall interfere in any way with another who is in pursuit of an opponent.

Sec. 3.—No player, except the goal-keeper (under Law IX., Sec. 7), shall wilfully touch the ball with his hand, save as provided in Section 4 of this Law; nor shall he wilfully fall and cover the ball with his body.

Sec. 4.—When the ball lodges in a place inaccessible to his crosse, or about his clothing, the player must at once remove it and "face" with his nearest opponent, all other players standing in the positions they may then occupy.

Sec. 5.—Should the ball catch in the netting, the crosse must immediately be struck on the ground and the ball dislodged.

Sec. 6.—No player shall grasp an opponent's crosse with his hands, hold it with his arms or between his legs or under his feet, or kick it.

XI. ROUGH PLAY.—Sec. 1.—No player, with his crosse or otherwise, shall hold or trip another, nor push with the hand; nor shall any player deliberately charge or shoulder an opponent, nor wrestle with the legs entwined, so as to throw an opponent. This does not prevent the use of the "body-check," provided the same be strictly as defined (Law XIII.), nor the pushing an opponent with the shoulder in ground-scuffles.

Sec. 2.—No player shall deliberately strike another, or threaten to do so under any circumstances, and anyone considering himself purposely injured during play, must report to the referee.

Sec. 3.—The check commonly known as the "square" or "crosse" check, which consists of one player *charging* into another with both hands on the crosse, so as to make the stick meet the body of an opponent, is strictly forbidden.

Sec. 4.—No player shall throw his crosse under any circumstances.

XII. PENALTIES.—Sec. 1.—For breach of Law X., Secs. 1, 2, 3, 5, and 6, the referee may either order a "face" or order a "free position" at the place where the foul occurred, but the "free position" must not take place within ten yards of the centre of goal. The ten yards distance shall be measured in a straight line from the centre of goal through the place where the foul occurred.

Sec. 2.—Claiming "fouls" on trivial grounds, as when, in the opinion of the referee, no foul was intended, cannot be tolerated,

and the referee shall first caution a player so offending, and, if persisted in, shall disqualify him until a goal is scored. Should the captain (non-playing) so offend, the same penalty shall be inflicted upon him as though he were a player.

Sec. 3.—For rough play (Law XI., Secs. 1, 2, 3, and 4), the penalty shall be either:—

(*a*) A "free position" for the side offended against; or
(*b*) Suspension of the offending player until a goal is scored; or
(*c*) Suspension of the offending player for the remainder of the match.

XIII. DEFINITION OF TERMS.—*Goal* is the space contained between the two posts.

Goal-crease shall be a marked line twelve feet square, and the goal posts shall be placed six feet from the front and back lines, and three feet from the side lines. If not marked it shall be left to the umpire to decide.

Goal Nets shall be as follows:—From a point six feet behind the centre of a line along the ground from post to post, nets shall be taken to each post, and to a bar placed across the top of the posts.

Face.—The ball shall be placed upon the ground between the crosses of two opponents, and each of them shall have his left side towards the goal he is attacking. They shall not move till "play" has been called, but must then immediately draw their crosses apart (towards them) before removing them from the ground.

Tripping is the use of the legs, feet, or crosse to throw an opponent.

Holding shall mean clutching with the hand or arm, or detaining an opponent between the two arms and the crosse, or placing the crosse against his body so as to impede his movements.

Body-check is the placing one's body in the way of an approaching opponent, so that the latter is simply impeded. No checker shall use force in the body-check.

Striking means the giving a deliberate blow with either crosse or hand.

Charging or *Shouldering* implies motion and unnecessary force in checking, and is forbidden, because the object should be to play the ball and not the man.

Stand.—The ball is dead when the referee calls "stand," and no player shall move until the referee calls "play."

Free Position.—The players shall "stand," except the goal-keeper, who may resume his place and the player to whom the referee awards the "free position;" and no player may be nearer than five yards to the last mentioned. If anyone be within the prescribed distance, he must retire to the satisfaction of the referee. The player awarded the "free position" shall then take the ball on his crosse in front of him, and at the word "play" from the referee the game shall proceed.

LAPWING—[*See* PEEWIT].

LAWN FOOTBALL—The idea of a lawn game with a football first occurred to A. Tebbutt and G. H. Du Boulay, of Winchester, some years ago. It was, however, crystallised into a proper game by W. Pickford and J. A. Nethercote, of Bournemouth, in 1895.

A Lawn Football Association has been formed, of which W. Pickford, of Bournemouth, is hon. secretary. Two courts, 25 feet long and 20 feet wide, are marked out, and divided by a wooden bar 3 feet 6 inches above the ground. Nearly in the centre of each court is a 5 foot circle. The object of the game is to kick or head the ball backwards and forwards over the bar into the opposite court without using the hand or arm, and each failure to return the ball counts a point to the opponent. The game consists of five sets of five points each.

The ball used is an ordinary Association football. To commence the game, one player, standing in his own circle, throws the ball underhand into his opponent's circle, and it may be returned on the first bounce; but afterwards it may also be returned before it has bounced. Each player may play the ball in his own court so as to get into a good position to return it, but it must not touch the ground twice without being played.

In other respects the rules are generally the same as at Lawn Tennis.

Two a side makes the best game, and rubber shoes should be worn.

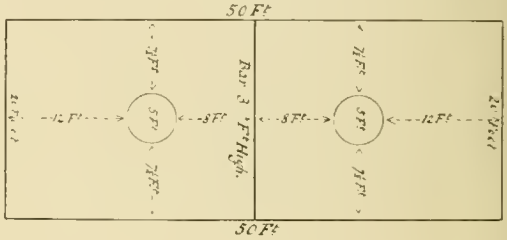
Lawn Football will generally be enjoyed by men who are, or have been, football players; it will be found good practice for Association football (more especially a half-back's play), as it teaches players to have great command over the ball, and, with practice, great skill is obtained in its management.

Play does not cut up and spoil a lawn; but it is not necessary for the lawn to be so smooth or level as for the games of tennis and croquet.

ARNOLD TEBBUTT.

LAWS OF THE GAME.

1. The size of the field of play to be 50 ft. by 20 ft., divided into two equal courts by a bar 3 ft. high. The



PLAN OF LAWN.

ground must be marked out, as in the diagram, with a circle 5 ft. in diameter in each court, 8 ft. from the bar, and equidistant from the sides.

2. The ball to be an Association football, match size. (It is advisable not to have it very tightly inflated).

3. Winner of toss to have choice of court or serve.

4. The player serving shall stand in his own circle and commence the game by throwing the ball into his opponent's circle. Should he fail to do so twice in succession, a point shall be scored by his opponent. The opponent must not play the ball until it has touched the ground within his own circle. He may then return it direct, over the bar, or, if he prefer, may play it within his own half, but it must not touch the ground twice without being played. Having eventually returned it over the bar, his opponent may do the same. Neither player must touch the ball with the hand or arm. Rubber shoes should be worn.

5. If either player fails to return the ball into the opponents' court, or touches the ball with his hand or arm, it shall count one point to the opponent, and the player reaching five points first shall score a set.

6. The players shall retain their courts until a second set has been scored, but the serving must be reversed.

7. The players shall then change ends and proceed as in the first two sets, if necessary, but the player scoring the majority out of the first 4 sets shall win the game.

8. In the case of a tie in sets at the end of the fourth set, a fifth set shall be played, and the players shall toss up for choice of ground or serve.

9. If the greater part of the ball when it touches the ground is inside the field of play, it is in play.

10. If the ball touch the ground in play and bounce out of the field of play in the air, it is not out of play until it has touched the ground outside the field of play.

11. The ball touching the bar and falling into the proper courts is to be in play.

12. The player serving must throw the ball underhand, with one hand, and without putting any twist or spin on it.

13. No player must encroach on his opponents' half of the field of play.

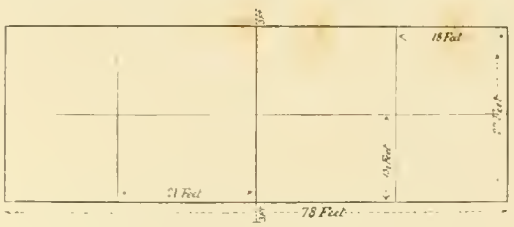
TWO-A-SIDE.

If two-a-side play the partners must serve, or take the *first* return, alternately, and the game then proceeds as above.

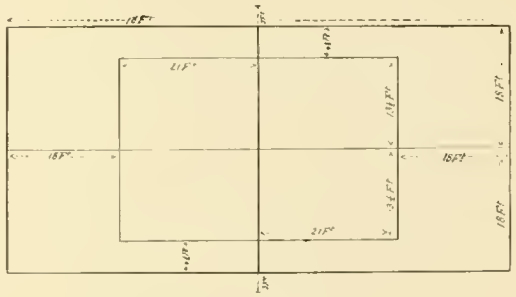
LAWN TENNIS—Although acknowledged to be the most modern of our national pastimes, lawn tennis in all probability had its origin in the ball games which were played in England and on the Continent some three or four hundred years ago. These have been variously known as hand-ball, longue-paumes, pallone and tennis, and, while some were played chiefly in enclosed and covered spaces, adaptations suitable for out of door games were from time to time tried, with more or less successful results. In 1873, Major Wingfield endeavoured to obtain some order from the chaos of these numerous attempts by producing *Sphairistike*, a game which differs as much from the lawn tennis of the present day as it did from its numerous predecessors. Nevertheless, it was upon this foundation that our present popular summer pastime was built.

A meeting of lawn tennis players was held at Lord's Cricket Ground in 1875, and a new code of laws was promulgated by a committee then appointed. By these new rules it was provided that the net should be 5 feet high at the posts and 4 feet high at the centre, and the service lines were placed at 25 feet from the net. The scoring was by points, as at rackets, but instead of "setting" at "14 all," the deuce and the vantage from the tennis scoring was adopted. The M.C.C. Committee accepted the hour-glass-shaped court, and the balls were to be $2\frac{1}{4}$ inches in diameter and $1\frac{1}{2}$ ounces in weight. Plain rubber balls had been used until this time, but now the covered ball rapidly found favour. This was introduced by Mr. J. M. Heathcote, the famous tennis player, who, in a letter to the *Field*, stated that by covering the balls with white flannel they were more easily seen, and that the bound was greatly improved.

Rapid strides were made in the development of the game in 1875, among the earlier reformers being Mr. Henry Jones, better known as "Cavendish," and it was chiefly through the efforts of this gentleman that lawn tennis was introduced on the ground of the All-England Croquet Club at Wimbledon, where, in the same year, the first championship competition was held. The proprietors of the *Field* newspaper presented a challenge cup for competition, and Messrs. Henry Jones, Julian Marshall and C. G. Heathcote were appointed a committee to frame rules for the tournament. With commendable energy and sagacity these gentlemen set about their task, and the result was that the hour-glass court was replaced by a rectangular court 26 yards long by 9 yards wide. The height of the net was altered to 5 feet at the posts and 3 feet 3 inches at the centre. One fault was allowed to the server, whose position was fixed by law, inasmuch as he was bound to serve with one foot beyond the base line. It was then discovered that the server had a considerable advantage over the striker-out, and consequently the service line was placed 4 feet nearer the net, which was reduced in height to 4 feet 9 inches at the posts, and 3 feet at the centre. It was also provided that the double court should be 12 yards wide, thereby permitting the inclusion of the single court in it. Previously the double and single courts had to be laid out separately. These revised rules were mutually agreed upon by the M.C.C. and the All-England Club, although a difference of opinion as to



PLAN OF SINGLE COURT.



PLAN OF DOUBLE COURT.

whether the racket or tennis scoring should be adopted led to both being legal. The example of the All-England Club in using tennis scoring only was, however, soon generally adopted, and in 1883 the M.C.C. acquiesced in the omission of the racket scoring as an alternative system.

In 1879 the volleyer made his appearance, and, judging by the correspondence in the *Field* and other papers on the subject, party feeling ran very high, the anti-volleyers in particular disputing with great warmth. The result of this was a further amendment of the laws in 1880. The service line was brought a foot nearer the net (21 feet), and it was enacted that any player touching the net should lose the stroke. Subsequent alterations reduced the height of the net at the posts to 3 feet 6 inches, and also debarred a player from striking the ball until it had passed the net. The size of the ball was fixed at $2\frac{1}{2}$ to $2\frac{9}{16}$ inches in diameter, and the weight at $1\frac{7}{8}$ to 2 ounces. With these alterations the rules were practically completed;

and, except for one or two very slight amendments, they exist in the same form now.

For many years the All-England Club occupied a position in connection with lawn tennis very much akin to that held by the M.C.C. in cricket, but they did not exercise their authority with the same tact and discretion as the rulers at Lord's. So early as 1880 exception was taken to some of their actions, and in 1884 an attempt was made to organise a Lawn Tennis Association. This failed, chiefly owing to the apathy of the players themselves, and partly by reason of promises made by the All-England Executive. But such an association was bound to come, and in the autumn of 1887 Messrs. H. S. Scrivener and G. W. Hillyard, at the request of Mr. N. L. Jackson, decided to issue a circular with the object of instituting a governing body for the game. The result of their efforts was the formation of the Lawn Tennis Association in 1888. This organisation was at once recognised by the All-England Club, which by the rules was given a large share in its management, and by all the principal clubs in the kingdom.

It is probable that the year 1881 was the most important in the history of lawn tennis. The demand for rackets, balls, and other implements of the game was so great that the supply could hardly keep pace with it. But all that was of but small account as compared with the influence on the play which the style and tactics of the brothers Renshaw exercised. Their volleying and smashing completely revolutionised the game. The long and tedious rallies of from 30 to 50 strokes then in vogue were soon replaced by a few sharp and crisp returns, far more entertaining to the spectators

THE SERVICE.

and certainly less fatiguing to the players. Not that the new methods were accepted without protest. Many of the older players desired to forbid or penalise volleying, and for a long time any man who played at the net at a garden-party was accused of bad form, and was sometimes boycotted in consequence. Fortunately, common sense prevailed, and the new order of things gave place to the old, and soon became generally appreciated. The idea of volleying was not a new one, but hitherto the volleyers had stood close to the net, when they were easily beaten by a lob, even though a trifle short, or passed by a good return down the side line. The twins, recognising this, took their

VOLLEYING.

position for volleying near the service line. From this point of vantage they could volley or smash as well as they could at the net, and they could the more readily return to the base line for a lob, or get to the side line for a well-placed drive.

After a long and somewhat heated controversy on the question of "Volleyer *v.* Base-line player," it was decided, early in 1882, to lower the net at the posts to 3 feet 6 inches, so that from that time down to the present the arrangements of the court have remained unaltered. This alteration, slight though it appeared at the time to be, made an enormous difference to the game. The base-line players found that by hard and well-placed drives they could to a great extent defeat the machinations of the volleyer, and headed by the redoubtable H. F. Lawford, they set to work in earnest to achieve that much-desired end.

Thanks to the persistency of Mr. Lawford in maintaining that base-line play, if good enough, could hold its own with volleying, the interest in the various contests was enhanced during 1883. Taking advantage of the reduction in the height of the net at the sides, the back-court players cultivated hard driving down the side lines, but nearly all of them also adopted volleying to some extent. Mr. Lawford, in particular, proved that a combination of the two styles was the best, for although he did not run in to the service line and volley whenever an opportunity offered, he never failed to follow up a good length return, if it placed his opponent at a disadvantage.

Lawn tennis may be said to have reached the

zenith of its fame in 1884, for, although the entries at some of the tournaments were not so large as in subsequent years, the number of competitions and the enormous attendance of spectators forcibly demonstrated the important position which the game then occupied. Every week during the season saw two or three important meetings held, and the crack players who had the inclination and the leisure were able to take part in important competitions from the second week in May until the first week in September without a break.

Implements of the Game—Really to enjoy lawn tennis it is necessary that the accessories should be of the best. To obtain these, go to F. H. Ayres, Slazenger and Sons, Osmond (of Lee), or some other really first-class manufacturer. The posts should be easily removable, but perfectly rigid when in position. A strip of stout white canvas about 2 or 3 inches wide should run across the top of the net so as to be seen easily by the players, and the net should be stout and strong. A flexible centre stay, to keep the net at the right height in the middle, is preferable, but a metal one is frequently used, and this does not present any great disadvantage. Side posts for use when a single game is played on a double court should also be provided, and these should be placed at a distance of 18 inches from the outside line of the double court and 3 feet from the side line of the single court. Stop netting to prevent the balls from travelling too far away is a necessity, unless the court is enclosed. This should be placed about 21 feet behind each base line and should extend for about 54 feet. The netting should then be continued diagonally, but almost parallel with the side lines for another 30 feet on each side. It is as well to have the netting about 7 feet high. It can be placed on movable posts, and the whole can be removed and packed away in ten minutes The balls should be of the authorised size and weight. Ayres' "Championship" are the standard balls, and Slazenger's are equally reliable, but both of these firms supply a cheaper article which complies with the regulations and is good enough for ordinary practice.

The Racket—So much depends upon the fancy of the player in adopting a racket to suit him or her that it is difficult to give any reliable advice, but as the game developed fancy shapes and eccentric ideas gave place to a straight-faced racket with an octagonal handle. The weight should be from $14\frac{1}{4}$ to $14\frac{3}{4}$ ozs. for a man, and about an ounce and a half less for a lady. The racket should balance when the finger is placed under the screw below the head; but in this players differ somewhat, as a base line player often prefers a little more weight in the head, while a confirmed volleyer prefers the heavier part in his hand. For a beginner, however, it is better to have a well-balanced racket made by one of the best makers. Avoid lop-sided or small-faced rackets, and see that the grain in the frame runs equally round the face. It should be tightly strung, so that when the gut is smartly struck it will emit a musical sound. Be careful not to select a small handle. All the best players use large handles, and nearly all have a rim of leather at the end of the handle to prevent it slipping through the fingers. The racket should not be gripped too tightly, and it should be held in such a way that the forehand and backhand strokes can be played alternately without shifting the fingers. Dr. Dwight, the first player to publish his views of the game, gives the following excellent advice with reference to holding a racket :—"Lay the racket on a table with the smooth side up. Open the hand with the thumb nearly at right angles with the fingers, and then clasp the handle in such a way as to make its upper right edge (or what would be its right edge if it were cut square) fit into the hollow of the joint between the thumb

Base-line Play.

and forefinger. In closing the fingers on the handle do not put them directly round it, but with the first joint of each finger slanting up the handle, which will cause the top joints to slant down the other way. The first two fingers should be a little separated from the other fingers and from each other. The end of the handle should be well within the hand, with the little finger round the leather rim. The thumb should not go round across the fingers, but should slope upwards across the upper side of the handle." Nearly every player has a natural way of holding a racket, and this it would be difficult to overcome; but by learning to copy the orthodox style a beginner is more likely to play in good form.

The Strokes—First of all, a player should become thoroughly accustomed to handling his racket, and should practise the motions of hitting, driving, serving, and smashing, both fore-

hand and backhand. It is also a good thing to knock a ball against a wall, returning it sometimes after it has bounded on the ground and at others as it comes direct from the wall. The player should remember that when making a forehand stroke his left foot should be in front and his body turned very slightly to the right. For a backhand stroke the body should almost face the left side line, towards which the toe of the left foot should point, while the right leg should be in front, and also inclining towards the left side line. Of course for a left-handed player these instructions must be reversed. Be careful not to commence the movements for a stroke until the latest moment possible. One of the greatest errors among beginners is their anxiety to get to the ball too quickly, instead of waiting for the ball to come to them. Always remember to strike the ball on its downward course and never as it is bounding up from the ground. Only the most expert players are able properly to play a rising ball.

The Service—There are two generally adopted methods of serving, one the overhand, for which the ball is thrown in the air and struck by the racket at a point almost as high as the player can reach; the other, chiefly adopted by ladies, the underhand service, for which the ball is dropped towards the ground and struck when within 18 inches or 2 feet of it. There are, however, many other ways of serving; and the usefulness of mastering these has been shown by many good players, notably by Dr. Dwight, Mr. E. G. Meers, and the Messrs. Renshaw. For the ordinary overhand service the ball should be thrown up in line with the right ear and slightly backwards. It should be struck by the racket just as it reaches its greatest height. If the service is intended to be a fast one, the racket should be used with a full face to the ball, but for a slower service with some cut on it the face should be diagonal, and drawn across the ball at the moment of striking. By the same rule a great deal of cut can be imparted to the underhand service by moving the racket sharply from left to right, or *vice versa*, when in the act of striking. As a rule, however, these fancy services are not of much use. A good hard service, *well placed*, so as to make the striker-out (*i.e.* the server's opponent) move from the position he has taken up, is the most reliable. Remember that at the moment of serving the body should be thrown well forward.

The Return of the Service—Many players who have become proficient in most of the strokes are unable to make their knowledge useful because they have never mastered the true methods of returning the service. This, indeed, is the most important stroke in the game. Should it be well made the striker at once assumes the advantage, but should it be weak or badly placed the server is almost sure to win the stroke. If the service is a very fast one the striker out must be content to return the ball into his opponent's court, doing this with as much force as possible; but should the service not be severe, then the ball should be returned straight down the side line or diagonally into the furthest corner of the court. Be sure to keep a good length, that is, to return the ball as near your opponent's base line as possible.

Base Line Play—Novices should devote themselves entirely to learning the base line play until they are fairly proficient at it. The volleying can soon be picked up afterwards. The base line strokes may be divided into two classes, the underhand and the horizontal. On a hard court, the latter should be adopted, but under other conditions the former is the best. For the horizontal stroke, the racket must be held at right angles with the body, the head being slightly higher than the hand. The ball should be struck just as it is at the top of the bound, or is beginning to drop, and the stroke should be made from the elbow, the arm being straightened as the ball is struck. For the underhand stroke, which is preferable to the other when practicable, the racket is held perpendicularly. The ball is struck when it is a little to the right front of the right foot, and the head of the racket should, at the moment of striking, be a little behind the hand, so that the wrist may be used in completing the stroke. The direction, too, should be imparted by the wrist, a slight turn of the racket to one side or the other effecting this. It is because of the direction being given at the last moment that this stroke is so useful, for the opponent is not able to get into position before. The cardinal point, however, in this and in all strokes, except when a lot of cut is required, is to remember to send the racket after the ball. Do not make a sharp, choppy stroke, but let the racket swing straight through even long after the ball has left it.

The Volley—No player can attain to any great degree of proficiency without learning to volley. There are more varieties of strokes in volleying than in any other method. There are forehand and backhand volleys, high volleys and low volleys, straight volleys and dropping volleys, and the "smash." The racket must hit the ball and not be held for the ball to rebound off it. It will be found advantageous to take a step with the foot furthest from the ball just before the moment of striking. Here again Dr. Dwight's sound advice cannot be improved upon. "As an example," he writes, "take the ordinary forehand volley at about the height of the shoulder (a very common stroke). The elbow should be away from the body and not down by the side, the wrist a little bent upward and the head of the racket above the hand. In striking, the weight is thrown forward on to the left foot, which is brought out with a good step in front of the right foot and a little across it. There is no preliminary swing of the racket backwards. The head of the racket should be brought forward on to the ball with a

sharp bend of the wrist, and the arm should be straightened to nearly its full length. The racket should not be checked suddenly after striking the ball, but should swing well forward. The elbow, shoulder and wrist should all be left free, and not held stiff, while the stroke is made. The backhand volley is made in much the same way. The elbow should be raised and away from the body, the head of the racket should be just on the left shoulder, and the stroke should be made by stepping forward with the right foot, straightening the forearm, and bringing the head of the racket sharply forward by bending the wrist. It is this turn of the wrist at the last moment of the stroke that gives sharpness and character to all volleys." The low volley is a much more difficult stroke, but it should be cultivated, because it saves time and returns the ball quicker than your opponent expects, and before he has time to correct his position. The "smash" is made from a slowly dropping ball, usually after a bad stroke by one's opponent. In this all the joints are left free, the only object being to hit the ball as hard as possible into the opponent's court. Mr. William Renshaw once gave the writer a terse but perfect illustration of how to smash. "Do it," he said, "just as if you were going to hit someone over the head with a stick." The motions are really identical. When possible, a volley should be placed as carefully as a ground stroke, and only a smash should be made without regard to position.

The Half-Volley—This is a stroke which should only be used in an emergency. A few players, notably Mr. E. W. Lewis, have so mastered it as to use it offensively, but as a rule a return from a half-volley is easily dealt with by an opponent, and therefore it should be avoided. It is a pretty stroke to watch, and occasionally saves time. It is made by striking the ball directly it rises from the ground, and, as the player cannot watch the ball when striking it, this can only be properly done by accurate timing. The racket should be held nearly vertical, having a slight forward inclination; and a sharp lift, or upward jerk, from the elbow, should be made as the ball is struck.

The Lob—Lobbing is a stroke useful only to gain time or to drive a volleyer from the net. The ball should be tossed high into the air and should fall as near the base line as possible. If the opponent is close to the net a low lob, just out of his reach, should be made, because the ball will drop quickly; possibly before he can return to play it. To gain time, the higher the ball goes the better, particularly as it drops straight from a high lob and is therefore more difficult to volley. The forehand lob is much easier than the backhand. The ball should be taken well in front and the wrist should be held fairly stiff, the direction being given by the elbow.

General Principles—Let the ball be returned as hard and as near the net as possible. Chiefly rely upon base line play, and never run up to volley until the opposing player is placed at a disadvantage. Serve hard for the first service, but for the second run no risks. A double fault is inexcusable. Learn to place the strokes as accurately as possible. To be able to do this, get a lad to throw balls to you, and let your object be to return them into a given space. Let this space from time to time be moved to different parts of the court. Try to ascertain your opponent's strong points and his weak ones. Avoid the former and pound away at the latter. Be sure to keep a good length; for, whether playing against a volleyer or a base line player, the further back he is kept, the longer is the time allowed you to see his strokes and to get to the ball. Keep well away from the pitch of the ball, and do not commence your stroke until the ball rises. You can then see if the ball has bounded truly or has "broken" (as cricketers term it) to the one side or the other, owing to cut or to inequalities in the ground. Be sure to make yourself perfectly conversant with the laws of the game before playing it. Always keep your eye on the ball, watch it as intently as a cat does a mouse, and your hand will follow the more accurately. After going to the side of the court or towards its service line to return a ball, quickly return to the centre close to the base line. Do not attempt too much; one point gained by a brilliant shot will not compensate for two or three lost through showy play. Never use bad balls. Always place the head of the racket in the left hand when not in the act of striking, and thus relieve the right hand of the constant strain it would otherwise be subjected to.

N. L. Jackson.

CARE OF COURTS.

Grass Courts—These can be made in three ways, viz.: (1) By improving an existing stretch of turf until it is level and smooth enough; (2) by levelling the ground, preparing the soil and growing grass seeds: and (3) by laying fresh turf. Of these the former is, of course, the simplest, but as the requisite piece of grass land is rarely available, particulars for preparing it are seldom required. In improving such a piece of turf care should be taken to remove all weeds or coarse grasses, and freely to use the spirit-level. To raise hollow places the turf should be cut out, lifted, and fine soil placed underneath until the proper height has been obtained, when the turf should be replaced and well beaten down with the flat side of a spade. On the other hand, small mounds should be removed by taking the soil away from under the grass, some fine mould being placed underneath the turf before it is replaced. To prepare a court for sowing seeds the same instructions may be followed as for making a turf-laid one, except that the seeds will be sown instead of the turfs laid. Take care that the seed is good by purchasing from a first-class seedsman, and, when ordering, it will be well to state what sort of soil is to be sown. By far the larger number of courts are made by laying fresh turfs.

When preparing the ground for a court, it is desirable to level a portion measuring 100 ft. by 50 ft., which

allows an ample margin, but for the playing portion itself only 78 ft. by 36 ft. is necessary. If economy must be strictly considered, only the latter need be carefully prepared, but it is better to have the whole done if possible. In making the preliminary arrangements much depends upon the subsoil. If this is very light, a little clay should be worked in with it, but if very heavy, a better court may be made by excavating to the depth of three or four inches and filling in with gravel and mould. In every case a thin layer of fine mould, which has been sifted through a sieve with a $\frac{3}{8}$-in. mesh, should be laid to the depth of an inch or so, and on this layer the turfs should be placed. Before this thin layer is put on, the ground should be rolled with a very heavy roller, so as to ensure its being thoroughly levelled. The superficial measurement of each turf is 3 ft. by 1 ft., and these can be obtained at prices varying from 6*s.* to 11*s.* per 100, according to the locality. For the court only about ten hundreds are necessary, but if the margin is relaid, twenty-four hundreds will be used. If the selected ground is covered with good turf, but is uneven, the turfs can be cut and taken off and relaid after the ground has been prepared as directed. The cost of the turfs can easily be ascertained, or can be estimated from the particulars given above. The amount of labour required varies according to the nature of the soil; but, roughly speaking, it would take three men four or five days to prepare the ground and cut and relay the turfs. If, however, there is some excavating to be done, the cost will be increased by the value of another four days' labour. Therefore, under favourable circumstances, with the turf already provided, the cost of a good grass court, with full-sized margin, would be from £13 to £15. If the turfs have to be purchased the cost would be about £23, and if, in addition, it is necessary to excavate and relay the soil, a further amount of £4 must be expended.

Care of Grass Courts—The incessant wear and tear to which lawn-tennis courts are subjected necessitates their receiving constant attention. By the end of a season a court is often so worn as to be almost bare. The best way to repair bare ground is to strip it and to lay fresh turf, and this should be done as soon as possible, so as to leave plenty of time for rolling and cutting during the early spring. Good tough turf, laid in February, or before the end of March, will be quite fit for use during the following season. Some of the finest turf for toughness and hard wear is to be found in the south and west of London. In the north-east the turf is upon clay, and is, consequently, poor and thin. Turf off the Downs is the toughest of all, but it is seldom that people will go to the expense of moving it any distance on account of the heavy railway carriage.

Sowing grass seeds is a less satisfactory method of repairing bare patches. Seed sown in March or April will give a nice-looking crop of grass by June, but there will be little or no wear in it, and it should not be played upon until the following year. On margins, however, and places which are not likely to be much worn, or on courts which will not be played upon until late in the season, grass seeds may be sown. A light covering of rich compost spread over the grass seeds will help them to take hold. Grass thus raised should not be cut with a machine for a while, as it will be so easily pulled up by the roots. It is best to use the scythe. The cheap grass seeds sold by most retail seedsmen are not good enough for tennis grounds. It is advisable to get a special mixture. Grasses for permanent lawns should include the Meadow Fescue (*Festuca pratensis*) and one or two other Festucas, Evergreen Meadow grass (*Poa sempervirens*), and the Cocksfoot (*Dactylis glomerata*). No clover seeds should be used if the ground is intended for very hard wear. Clovers look nice, but they are detrimental to good turf, and not only discolour the ball but greatly affect its bound.

Another point to which careful attention should be given is manuring. In the early spring grass roots may be greatly benefited by a good dressing of manure well worked in, but ordinary manuring is best done before winter. A good top dressing on turf helps to shelter the roots of the grass, and gives them something fresh to work into. Artificial manures, containing a high percentage of phosphate of lime, are useful to stimulate the growths, but do not thicken the turf much.

Worm casts, besides being a nuisance, are always a great eyesore. The best plan is to sweep them off, or spread them about every morning with a birch broom. Where it is thought advisable to destroy the worms, it will be a good plan to buy a special fluid for that purpose, and to follow carefully the directions given with it. Upon pleasure grounds and at private residences, which are surrounded by shady overhanging trees on the margin of the lawn, the rough bare spots beneath the trees are generally objectionable. These may be made to look nice by turfing them afresh each spring; the cost is but trifling, and the improvement will well repay the trouble.

A few days before any important event, such as a tournament, it is a good plan to select and mark off the special ground for the purpose. If the weather be dry, the ground should have a thorough soaking with water, which should be sprinkled gently from a rose watering can, not thrown on with a hose. Two days after, skim over with a mowing machine. Rest the ground for, say a week, then roll and sweep, and give another heavy soaking of water in the evening. Two days after that the lawn, if made of good turf, will be ready and fit for use.

Hard Courts—For winter or wet weather play it is necessary to find a substitute for grass courts, and many materials have been tried with the object of ascertaining which is the best. The variety of these is great. There are gravel, cinder, rubble, concrete, cement, tar paving and asphalt. Of these the last is the best, but it is also much the most expensive, and therefore less likely to be used. Concrete and cement courts rarely withstand the effects of a severe frost. Tar-paving is cheap and useful. Cinders are dry but dirty. Gravel is the best for ordinary wear and tear, but only if the proper sort of gravel is used. A good gravel court can be played on immediately after a heavy rain, for it dries quickly. It is pleasant in colour, and does not discolour the balls so rapidly as most of the other materials used for hard courts. The only occasion on which it cannot be used is when a thaw succeeds a sharp frost, and then it must be untrodden, or the gravel will come away in patches.

Gravel Courts—The ground, for a space of 80ft. by 36ft., should be excavated to a depth of seven inches. This completed, put in a layer of brick rubbish, in pieces about one and a half inch cube, to the depth of four inches. This must be thoroughly well beaten down, levelled and rolled with a heavy roller before the gravel is put on. The drainage will be improved by laying 4-in. drain pipes about 12ft. apart in this layer of brick rubbish. Immediately before laying the gravel the lower level should be thoroughly soaked with water, and then the coarser gravel, to the depth of about two inches, should be placed on it. The finer stuff should be laid on the top, and the whole well watered and rolled during the whole time it is being laid. Water, from a watering-pot or other contrivance, should be poured on to the roller while it is being used. It does not matter if the gravel gets "squashy," it will be firm and well bound when it has dried. The surface should be slightly inclined (a fall of two or three inches will do) from the ends to the centre, and an open drain should be laid underneath where the net will be placed, to carry off the water after a heavy rain. This may be covered with open tiles or light iron gratings to keep the balls from rolling in. After the top surface has been laid and well watered and rolled, it should not be trodden on until the whole is thoroughly dry. During hot or

dry weather these courts should be watered and rolled every morning or evening—the latter for choice. The cost of gravel courts naturally varies considerably, according to the accessibility of the gravel pits. Croydon gravel is considered the best for the purpose; but there are many places where a good, hard, close-binding material can be obtained. The price of the gravel depends greatly upon the cartage required, but to enable an estimate to be made it will be sufficient to state that, in the southern suburbs of London, Croydon gravel can be obtained for about 8*s.* 6*d.* per square yard. If only the court itself—*i.e.*, a space 78ft. by 36ft.—be laid, twenty-six loads will be necessary, but if the margin be similarly laid (as it should be), the area will be 99ft. by 48ft., and sixty-seven loads of gravel will be required. For the smaller space thirty-five, and for the larger ninety loads of brick rubbish would be wanted. The labour required—exclusive of the carrying or cartage—would not be very expensive. Five men would do the excavation, levelling and filling-in, in six days for the smaller space, and in eight or nine days for the larger area. Approximately, the total cost for the court only should not exceed £25, and for the court and margin £48. Rubble courts are made very much in the same way as gravel. They are less expensive and less durable, and are not generally as satisfactory.

Cinder Courts—Cinder or ash courts are easily made, and cause little trouble to keep in order. To make them, a space of 100ft. by 50ft. in extent should be excavated to a depth of 8½in. A main drain, with 3-in. pipes, should be laid, with a fall of 2ft. in the whole length, and into this should run five branches of 2-in. pipes. Agricultural drain pipes, and not the glazed and jointed, must be used. About 5in. of brick rubbish should form the bottom layer, and this must be watered, rolled, and levelled. Next lay about 3in. of clinkers, or the rough scouring of ashes, which must be well watered and rolled, and then add the finishing layer of the finest screened household ashes. This must be put on in very thin layers, each layer being well watered and rolled, for if it is put on thickly it will not bind. The court when finished will soon dry, and afterwards a daily watering and rolling is all that is required. The fine cinders should cost about 5*s.* a load, and the brick rubbish and clinkers not more than 2*s.*, and the cost, including labour, would be about £50 or £60.

Asphalt Courts—None but skilled workmen can make a proper asphalt court, and it is not, therefore, necessary to give details of its construction. The cost may be roughly stated at from £100 to £130. Concrete or cement courts are expensive, although they do not cost so much as asphalt, but they give nothing like the satisfaction which the latter affords. They are very liable to crack, especially in frosty weather, and when this occurs their surface soon loses its evenness.

N. L. JACKSON.

LAWN TENNIS IN SWITZERLAND

LADIES' LAWN TENNIS—People have very frequently asked me if I consider lawn tennis an athletic game, a question that has always amused me very much. I presume my questioners have never witnessed a hard five set match between two first-class men, played under a broiling sun. It is doubtful if any game is a severer test of endurance. For ladies, too, it is decidedly a very athletic exercise, always supposing that they go in for it heartily, and do not merely frivol at garden parties; and no game, in my opinion, is so eminently suitable for them, or so wholly delightful in every way. In spite of prognostications that it would die out entirely, which have persistently been made for the last twelve years, it still more than holds its own, and though it is not the fashionable craze now that it once was, and is not played as

much at garden-parties, there are still a vast number of enthusiastic adherents, and it is wonderful how many tournaments take place every year. If ladies really want to become first-class players, they must of necessity enter for tournaments, as the practice they afford is invaluable in every way.

Ladies' dress is always more or less of a trial when taking exercise, and the blessings of our sex would be heaped upon any one who could invent a practical, comfortable, and withal becoming costume. It *must* be becoming, or very few of us would care to wear it. As the skirt must be endured, it is important to have it made somewhat short, reaching to the ankles, and equal in length. That is, seemingly equal: but in reality a lawn tennis skirt should be cut half an inch or an inch shorter at the back than the front. It will then appear uniform in length all round, and will not trip you up when you run backwards in volleying, say, a high lob, which skirts, as ordinarily made, are much inclined to do. It should be about three yards wide. If less, it would be rather apt to catch, when one makes sudden springs from side to side, as in volleying; and if wider, the wind blows it about and perhaps it hits the racket when we fondly imagine we are going to drive the ball.

Women certainly dress far more suitably nowadays when taking violent exertion than they used to do, and it would be impossible in these days to see a competitor in a large open tournament sallying forth to play a single on a broiling June morning, dressed in black velvet with long black kid gloves! But the spirit moved one of my opponents (years ago) thus to attire herself.

Novices nearly always get too near to the ball, and rush forward to strike it directly after the bound. It is a fatal mistake to get so close, as you lose freedom. Rather should you keep the ball at arm's length, taking care, however, not to be forced to stretch uncomfortably. There is a tendency now amongst good players to strike the ball somewhat higher from the ground than formerly, because the stroke is quicker, and allows the opponent less time to recover herself if she has lost a good position in court.

Ladies should practise volleying more. It is exceptional to find any who have a first-rate idea of it. The exertion, in playing a single, of running up to the service-line persistently, is very considerable, and probably for this reason the great majority elect to play from the base-line. As the size of the court stands at present, it is almost too large for a lady to cover comfortably from the service-line, and it is very disheartening to be easily passed after taking the trouble to puff and pant up to that coign of vantage! But it is invaluable to be able to follow up a good return and make a crisp volley across the court. It is excellent practice for volleying to stand at the service-line with some one on the opposite service-line and try to keep the ball going (all volleys) as long as ever one can. Particular attention should be paid to the position of the feet, and the body should be turned rather sideways to the net, right foot advanced for a back-hand stroke and left for a fore-hand, and one must be continually on the move and alert to get into the best possible position before hitting the ball. It is a fatal mistake to try and reach balls merely by stretching for them, as the balance of the body is then in quite the wrong place, and one cannot control the return or put any force into it.

Another important rule is that connected with "following through." Do not stop your racket at the moment of contact with the ball. Let the force which you put into the beginning of the shot expend itself naturally, otherwise it is apt to become jerky and stiff. And do not forget to watch your adversary closely and endeavour to see where she is going to place her return. How often we see a player standing still watching the effect of a fine stroke that she has made, and then giving a start of surprise when it is unexpectedly sent back! Instead of that she should immediately have returned to a safe position in the middle of the court and made every preparation to receive the return warmly. By the middle of the court I do not, of course, include that space half way between the base and service-lines, which is a very favourite spot for the novice to place herself at. It is one of the weakest positions in the court, as you can't volley a ball effectively so far from the net, and if you wait for it to bounce it necessitates running back a few paces most likely, with the alternative of making a risky half volley, which the novice almost invariably supposes to be a stroke worthy of much cultivation, but which, on the contrary, should only be used in emergencies. A good player will take a quick step forward to volley a ball which the beginner half volleys in an undecided way, and probably makes an easy shot for the opponent to jump upon. There is no reason why ladies should not become adept volleyers if they only take pains to practise enough, and it makes the game twice as enjoyable. It is quite pitiful sometimes to watch a ladies' double and to see those interminable rallies from the back of the court, and the poor umpire's head wagging mechanically from side to side, reminding one of the wee Chinese dollies, who move their heads, however, the other way—up and down. You long for one of the players to go up and volley the return smartly across the court. It adds enormously to the strength of a mixed double if the lady can go up and volley, and men always prefer a partner who can do so. If she stays back, there is always an opening through which the ball can be returned to her, whereas, if she is at the service-line, there is none. The best lady players are learning to volley more and more, but there is still great room for improvement, particularly as regards the pace with which they

all hit their volleys. It is very little use merely to interpose the racket in the line of the ball's flight. The arms must be swung back boldly, and the ball must be distinctly hit. It is a revelation to have a really first-rate player for an opponent.

Overhand serving has been adopted very much more of late years by ladies, though it is doubtful if they gain much thereby. It is decidedly much more fatiguing, and is difficult to follow up to the service-line quickly, as it takes a moment or two to recover from the effort which it has caused. An underhand service however is generally much feebler, and it is well nigh impossible to help it being so. In playing a mixed double it is a moot point whether it pays better for the lady to serve underhand and then run up quickly to the service-line (where she *must* be in position before return is made) or to deliver a (we will hope) swift overhand ball, staying back to receive the return, which may also fall into the clutches of her watchful partner at the net. It is most important to serve a good length second service, a stroke much neglected by everybody. And we should strive not to make foot-faults! It is appalling how casual people are about them. Watch any ordinary game, and some of the players are certain to transgress that small rule, and are sure to be much put out, if they chance to play a match, when the umpire reminds them of the fact.

In golf, one is always told above all things "to keep one's eye on the ball." Now nobody seems to mention that particularly to lawn tennis players, yet I always think it is almost equally important, and have endeavoured to glue my own eyes as hard as possible on the approaching ball, particularly when in the act of striking.

A good player seems intuitively to divine where the ball is coming, and moves quickly into the best position for returning it. Novices very often have no idea where it is coming. It is simply a matter of practice and experience; there is no thought-reading about it. It is rather amusing to watch the eyes of your antagonist, as she will sometimes take a hasty glance at the spot in your court where she contemplates despatching the ball.

Those who have never gone in thoroughly for lawn tennis can form no idea of the infinite possibilities of the game. It has always, like golf, been much underrated by non-players, as it looks so absurdly easy. One finds garden-party folk ignorant of half the beautiful little delicate strokes which can be cultivated, and if any one happens to dare drop a ball short over the net, there are immediately cries of "Oh! how mean!"

It has always been a reproach against women that they never care to keep strictly to the rules of whatsoever game it pleases them to play. That may have been so in the past, when ladies were but novices in the pursuit of athletics, and had not had time to imbibe the true spirit of games, which men had done for generations. Still, it makes it only the more important for us all to strive so to model our behaviour that we may truthfully be called, in more senses than one, the *fair* sex!

L. Dod.

LAWN TENNIS IN AMERICA—Boston is responsible for the introduction of lawn tennis to America, and has continued its most sympathetic supporter. Beyond the few, and their friends, identified with its earliest history, not many know that lawn tennis was played in and around Boston for five or six years before it attracted general sporting attention in America. Yet it is perfectly true that a Boston man in 1874 purchased in England a set of nets, balls, rackets, &c., brought them to his country place, and there in August of the same year the first American lawn tennis court was laid out and played upon. This was at Nahant, a fashionable suburban residence section within a few miles of Boston.

The implements of that first game were crude, despite their being English. The net was 5 ft. in height, the rackets light in weight and poor of shape, and the balls, of the uncovered rubber variety, such as those with which children play. Dr. James Dwight and Mr. F. R. Sears, jun., may be set down as the pioneers of the game, for they first expounded the law and the practice of it, on this first court. Sears was an elder brother of R. D. Sears, who subsequently became so famous in the American annals of the game. Dr. Dwight is well known to English tennis of about twelve years ago; indeed, so is R. D. Sears, both having played in a number of British tournaments, though neither succeeded in bringing home a championship.

F. R. Sears abandoned the game before it attained much popularity, and even Dr. Dwight, although an active devotee in the latter seventies, during which time he was invincible, had practically retired from single play by 1884. He was decisively beaten by Sears in 1883, and on his other and last appearance in the championship single tournament in 1886 he was defeated in straight sets by H. A. Taylor. In the doubles championship, however, Dr. Dwight and R. D. Sears played from 1881 to 1887 with marked success; then they finally retired, Sears as an unbeaten singles champion, having won the title from 1881 to 1887 inclusive; and the pair with the doubles championship to their credit from 1882 to 1887 inclusive.

Play at Nahant naturally attracted attention, and the year following the importation of the pioneer set, another was brought over and the game started at Newport, R.I., in the early summer of 1875. Both this court and the one at Nahant were laid out on private grounds, and,

of course, only open to a few intimates of the property's owners.

The honour of first adding lawn tennis to the list of club sports belongs to the Staten Island Cricket and Baseball Club, which laid out a court and got over from England the necessary paraphernalia in 1875. Staten Island was particularly well favoured as a sporting nursery; it was not over half an hour from New York, it had a number of young Englishmen in residence, and among the club members was so tireless an enthusiast as Mr. E. H. Outerbridge, who, more than any other single individual, set the lawn tennis ball a-rolling on Staten Island.

During these two years undoubtedly numerous matches were played, but the first tournament to be held in this country was, appropriately enough, given at Nahant in 1876.

The first open tournament held in the United States was given by the Staten Island Cricket and Baseball Club in 1880. The singles were won by O. E. Woodhouse, an Englishman in temporary residence, and the doubles by Wood and Maning over Dwight and Sears. But the chief end served by this tournament was to show the need of codified rules, universally observed.

Finally a call was issued in the name of the following: The Staten Island Cricket and Baseball Club; the All Philadelphia Lawn Tennis Committee; and the Beacon Park Athletic Association of Boston. Thirty-three clubs responded and the United States National Lawn Tennis Association was organised in New York, May 21st, 1881, with R. S. Oliver, of the Albany Club, as its President. A Constitution and Bye-laws were adopted, and the rules of the Marylebone Cricket Club and All England Lawn Tennis Club were adopted. It may be said that the Association has always, in its rule making, followed closely the English standard, except where an obvious improvement would result to the American game by departure from it. At that meeting it was also decided to hold an annual championship tournament in singles and doubles, at Newport, R.I.

With the organisation of the National Association, lawn tennis took one of those booms peculiar to this pulsing land of ours. Throughout the eighties the game waxed wonderfully in strength and popularity. It spread throughout the United States, the increase of clubs leading to sectional championships, although always under the rules and auspices of the National Association. Until three years ago there had been no abatement in lawn tennis interest—since that time the conquest of America by golf, and the slow development of worthy successors to replace the retiring first class, have lessened somewhat the recruiting field and lowered the general play in the last rounds of our best tournaments—notably the championship at Newport.

This condition is only true of Eastern United States; in the Middle, West, and far West, interest is by no means lessened. It is greater than ever it was.

In 1881, after having won the United States Championship, R. D. Sears was beaten by J. J. Cairnes, an Englishman, for a special trophy. In 1884 the Association ruled to bar the champion out of the All-Comers' Tournament, requiring him to defend his title against the All-Comers' winner immediately on conclusion of that tournament. In 1885, R. D. Sears, who had been playing in England, gave America its first view of that drop stroke—the Lawford, so-called. In 1886 it was decided to make all championship matches three out of five sets, instead of two out of three, as had been the previous custom.

In 1889, E. G. Meers, an Englishman reported to be ranked among the first ten of Great Britain, was defeated in the fourth round of the All-Comers' by O. S. Campbell, a boy of twenty. Campbell was defeated that year for the All-Comers' by Q. A. Shaw, jun., who in turn was beaten for the championship by H. W. Slocum, jun. But the next year Campbell defeated Slocum for the national honour, which he successfully defended in 1891 and 1892 by beating Hobart and Hovey. Campbell defaulted in 1893 to R. D. Wrenn, the present champion.

The period of Campbell's activity may be said to represent the heyday of American tennis. He showed the first perfected net game, which was subsequently adopted by the cleverest players we have; and during his time the general average of play at Newport was higher than it has been since. The men who then made all the rounds interesting have to a great extent retired, and there are none of equal skill to replace them. Men were ranked among the first ten last year who would not have had even a look in three years ago.

The year 1894 was notable in American lawn tennis because of the playing of M. F. Goodbody, an Englishman, in our championships. Goodbody beat, in successive rounds, F. H. Hovey, Clarence Hobart, and W. A. Larned (three of our best four players), and won the All-Comers'. But Wrenn defended the championship against Goodbody, beating him three sets to one. Wrenn lost the championship to Hovey in 1895, but won it back again last year (1896).

Several Americans at different times have played in British tournaments—Dwight, Sears, Campbell and Larned being the most prominent, but no one has yet been notably successful, certainly not to the extent of Mr. Goodbody's exploit in America. When Messrs. Pim and Mahoney visited Boston in 1895 they were fairly successful in singles, Pim beating Hovey, Larned and Chace, and Mahoney beating Hovey and Chace; but Hobart and Hovey beat them in doubles, and Hobart won a great match from Pim.

The performances in America of Englishmen, and the progress in English tournaments of Americans, prove conclusively that the English game, if not in occasional individuals, at least in general, is a harder game than the American average. Unless it be R. D. Wrenn, our present champion, there is not a native playing tennis in America to-day who could successfully go through the English champion tournament. There are probably several Englishmen, any one of whom could win the All-Comers' cup at Newport this year.

The superiority of, say, the first English ten over the first American ten is easily accounted for. Age, experience and opportunities for practice. Our first-class "men" are mere boys, who, as a rule, play but a year or two after graduation from college. Just as their play is maturing and strengthening they retire from the game. The contrary is the case in England.

The English game is less brilliant, but more forceful. The American plays a distinctively offensive game—striving to win every point by supreme exertion—and he is apt to be erratic. The Englishman is first of all a superb getter; he gets everything back, giving his opponent as many chances as possible to beat himself, and is almost certain to be steady. Englishmen hit the ball harder, and do not miss the comparative easy shots, as we see our cracks do in their hit or miss slashing style. When an English player gets a point, it is on his own winning stroke, and not on his opponent's poor play. Englishmen are provident of their strength and chances; the American uses both in great prodigality, and to his undoing, if he be opposed to one of the opposite sort. In short, the Englishman is the tortoise and the American the hare of lawn tennis.

However, it is true that although our first ten are not this year as good as a few years ago, the average of general play throughout the country is being greatly improved and steadied by the various inter-scholastic, inter-collegiate, and inter-state and other tournaments on an interminable list, which continues to grow, despite golf.

Meantime, however, it cannot yet be denied that Englishmen know more lawn tennis than do we.

CASPAR WHITNEY.

GLOSSARY.

Advantage—The next stroke won by either player when the score is *deuce* (*q.v.*).

Advantage-game—The odd game one, if both sides have previously scored an equal number of games over and including five games all.

Back-hander, Back-handed stroke—A stroke in which the ball is hit with the reverse side of the racquet.

Ball—[*See* LAW 2].

Bisque—A method of handicapping, now obsolete. It was one stroke which could be claimed at any time.

Deuce—The score when both players or sides have won three strokes (=40 all).

Deuce-game—The game won, which makes the score in games level when each side has won more than five.

Doubles—A game with two players on each side.

Drop-stroke—A stroke by which the ball is made to drop dead, just clearing the net.

Fault—[*See* LAWS 9–12, and 33].

Fifteen—The score for either player on winning his first stroke.

Forty—The score for either player winning his third stroke. [*See* DEUCE.]

Forty-all—[*See* DEUCE].

Games-all—If both players win five games, the score becomes games-all. [*See* LAW 22.]

Half-volley—A stroke made the moment the ball leaves the ground.

Hang—A method of service by which the ball comes up slowly or irregularly from the ground.

Let—A service, which for reasons defined in Law 16, is not counted.

Lob—A ball returned high in the air, usually to avoid a player at the net.

Love—Nothing scored.

Love set—A set won in six consecutive games.

Place—To direct the ball to a desired part of the opponents' court.

Poach—To take a ball that should be taken by one's partner.

Rally—A series of strokes, beginning with the service and ending with a failure to return the ball.

Rough side of Racket—The side of the racket from which the twisted gut projects.

Serve—The delivery of the ball from the back line at the commencement of the game, and after the scoring of each point.

Single—A game with one player only on each side.

Smooth side of racket—The side from which the twisted gut does not project.

Sudden death—A term used when it has been agreed to decide the set by the best of eleven games without playing *deuce* and *vantage* games.

Tennis-elbow—An injury to the arm, attributed to excessive strain in overhand service.

Thirty—The score for a player on winning his second stroke.

Twist—A movement imparted to the ball, causing it to swerve on rising from the ground.

Volley—Returning the ball before it reaches the ground.

LAWS OF THE GAME.

The Single-handed Game.

1. For the single-handed game, the court is 27 ft. in width, and 78 ft in length. It is divided across the middle by a net, the ends of which are attached to the tops of two posts, which stand 3 ft. outside the court on each side. The height of the net is 3 ft. 6 in. at the posts, and 3 ft. at the centre. At each end of the court, parallel with the net, and at a distance of 39 ft. from it, are drawn the *base-lines*, the extremities of which are connected by the *side-lines*. Half-way between the side-lines, and parallel with them, is drawn the *half-court line*, dividing the space on each side of the net into two equal parts, called the *right and left courts*. On each side of the net, at a distance of 21 ft. from it, and parallel with it, are drawn the *service-lines*.

2. The balls shall not be less than $2\frac{1}{2}$ in., nor more than $2\frac{5}{8}$ in. in diameter; and not less than $1\frac{7}{8}$ oz., nor more than 2 oz., in weight.

3. In matches where umpires are appointed, their decision shall be final; but where a referee is appointed, an appeal shall lie to him from the decision of an umpire on a question of law.

4. The choice of sides and the right of serving during the first games shall be decided by toss; provided that, if the winner of the toss choose the right to serve, the other player shall have the choice of sides, and

vice versa; and provided that the winner of the toss may, if he prefer it, require the other player to make the first choice.

5. The players shall stand on opposite sides of the net; the player who first delivers the ball shall be called the *server*, the other the *striker-out*.

6. At the end of the first game the striker-out shall become server, and the server shall become striker-out; and so on alternately in the subsequent games of the set.

7. The server shall stand with one foot beyond (*i.e.*, further from the net than) the base line, and with the other foot upon the base line, and shall deliver the service from the right and left courts alternately, beginning from the right.

8. The ball served must drop within the service-line, half-court-line, and side-line of the court which is diagonally opposite to that from which it was served, or upon any such line.

9. It is a *fault* if the service be delivered from the wrong court, or if the server do not stand as directed in Law 7, or if the ball served drop in the net or beyond the service-line, or if it drop out of court or in the wrong court; it is not a *fault* if the server's foot, which is beyond the base-line, do not touch the ground at the moment at which the service is delivered.

10. A fault may not be taken.

11. After a fault, the server shall serve again from the same court from which he served that fault, unless it was a fault because served from the wrong court.

12. A fault may not be claimed after the next service has been delivered.

13. The service may not be *volleyed*, *i.e.*, taken before it touches the ground.

14. The server shall not serve until the striker-out is ready. If the latter attempt to return the service, he shall be deemed to be ready.

15. A ball is *in-play* from the moment at which it is delivered in service (unless a fault) until it has been volleyed by the striker-out in his first stroke, or has dropped in the net or out of court, or has touched either of the players or anything that he wears or carries, except his racket in the act of striking, or has been struck by either of the players with his racket more than once consecutively, or has been volleyed before it has passed over the net, or has failed to pass over the net before its first bound (except as provided in Law 17), or has touched the ground twice consecutively on either side of the net, though the second time may be out of court.

16. It is a *let* if the ball served touch the net, provided the service be otherwise good; or if a service or fault be delivered when the striker-out is not ready; or if either player be prevented by an accident beyond his control from serving or returning the ball in play. In case of a let, the service or stroke counts for nothing, and the server shall serve again.

17. It is a good return although the ball touch the net, or, having passed outside either post, drop on or within any of the lines which bound the court into which it is returned.

18. The server wins a stroke if the striker-out volley the service, or fail to return the service or the ball in-play (except in the case of a let), or return the service or ball in play so that it drop outside any of the lines which bound his opponent's court, or otherwise lose a stroke, as provided by Law 20.

19. The striker-out wins a stroke if the server serve two consecutive faults, or fail to return the ball in-play (except in the case of a let), or return the ball in-play so that it drop outside any of the lines which bound his opponent's court, or otherwise lose a stroke, as provided by Law 20.

20. Either player loses a stroke if the ball in-play touch him or anything that he wears or carries, except his racket in the act of striking; or if he touch or strike the ball in-play with his racket more than once consecutively; or if he touch the net or any of its supports while the ball is in-play; or if he volley the ball before it has passed the net.

21. On either player winning his first stroke, the score is called 15 for that player; on either player winning his second stroke, the score is called 30 for that player; on either player winning his third stroke, the score is called 40 for that player; and the fourth stroke won by either player is scored game for that player; except as below:—

If both players have won three strokes, the score is called deuce; and the next stroke won by either player is scored advantage for that player. If the same player win the next stroke, he wins the game; if he lose the next stroke, the score is again called deuce: and so on until either player win the two strokes immediately following the score at deuce, when the game is scored for that player.

22. The player who first wins six games wins a set; except as below:—

If both players win five games, the score is called games-all; and the next game won by either player is scored advantage-game for that player. If the same player win the next game, he wins the set; if he lose the next game, the score is again called games-all; and so on until either player win the two games immediately following the score of games-all, when he wins the set.

NOTE.—Players may agree not to play advantage-sets, but to decide the set by one game after arriving at the score of games-all.

23. The players shall change sides at the end of every set, but the umpire, on appeal from either party, before the toss for choice, shall direct the players to change sides at the end of the *first, third, and every subsequent alternate game of each set*, provided that in such event the players shall not change sides at the end of a set if the number of games in such set be even; but if the appeal be made after a match has been begun, the umpire shall only direct the players to change sides at the end of the *first, third, and every subsequent alternate game of the odd and concluding set*.

24. When a series of sets is played, the player who was server in the last game of one set shall be striker-out in the first game of the next.

ODDS.

25. In the case of received odds:—

a. One-sixth of fifteen is one stroke given in every six games of a set in the position shown by the annexed table.

b. Similarly, two-sixths, three-sixths, four-sixths, and five-sixths of fifteen are respectively two, three, four, and five strokes given in every six games of a set in the position shown by the table.

	1st Game.	2nd Game.	3rd Game.	4th Game.	5th Game.	6th Game.
$\frac{1}{6}$ of 15	0	15	0	0	0	0
$\frac{2}{6}$ of 15	0	15	0	15	0	0
$\frac{3}{6}$ of 15	0	15	0	15	0	15
$\frac{4}{6}$ of 15	0	15	0	15	15	15
$\frac{5}{6}$ of 15	0	15	15	15	15	15

EXAMPLE.—A player receiving four-sixths of fifteen receives nothing in the first and third games, and fifteen in the second, fourth, fifth, and sixth games of a set.

NOTE.—The table is not carried beyond the sixth game, as in the next and every succeeding six games the odds recur in the same positions.

c. The above odds may be given in augmentation of other receiving odds.

d. Fifteen is one stroke given at the beginning of every game of a set.

e. Thirty is two strokes given at the beginning of every game of a set.

f. Forty is three strokes given at the beginning of every game of a set.

26. In the case of owed odds :

a. One-sixth of fifteen is one stroke owed in every six games of a set in the position shown by the annexed table.

b. Similarly, two-sixths, three-sixths, four-sixths, and five-sixths of fifteen are respectively two, three, four, and five strokes owed in every six games of a set in the position shown by the following table :

	1st Game.	2nd Game.	3rd Game.	4th Game.	5th Game.	6th Game.
$\frac{1}{6}$ of 15	15	0	0	0	0	0
$\frac{2}{6}$ of 15	15	0	15	0	0	0
$\frac{3}{6}$ of 15	15	0	15	0	15	0
$\frac{4}{6}$ of 15	15	0	15	0	15	15
$\frac{5}{6}$ of 15	15	0	15	15	15	15

EXAMPLE.—A player owing two-sixths of fifteen would owe fifteen in the first and third games, and nothing in the second, fourth, fifth, and sixth games.

NOTE.—The table is not carried beyond the sixth game, as in the next and every succeeding six games the odds recur in the same positions.

c. The above odds may be owed in augmentation of other owed odds.

d. Fifteen is one stroke owed at the beginning of every game of a set.

e. Thirty is two strokes owed at the beginning of every game of a set.

f. Forty is three strokes owed at the beginning of every game of a set.

THE THREE-HANDED AND FOUR-HANDED GAMES.

27. The above laws shall apply to the three-handed and four-handed games, except as below.

28. For the three-handed and four-handed games, the court is 36 ft. in width. Within the side-lines, at a distance of 4½ ft. from them, and parallel with them, are drawn the service-side-lines. In other respects the court is similar to that which is described in Law 1.

29. In the three-handed game, the single player shall serve in every alternate game.

30. In the four-handed game, the pair who have the right to serve in the first game may decide which partner shall do so, and the opposing pair may decide similarly for the second game. The partner of the player who served in the first game shall serve in the third ; and the partner of the player who served in the second game shall serve in the fourth, and so on in the same order in all the subsequent games of a set.

31. The players shall take the service alternately throughout each game : no player shall receive or return a service delivered to his partner ; and the order of service and of striking out, once arranged, shall not be altered, nor shall the striker-out change courts to receive the service before the end of the set.

32. The ball served must drop within the service-line, half-court-line, and service-side-line of the court, which is diagonally opposite to that from which it was served, or upon any such line.

33. It is a *fault* if the ball do not drop as provided in Law 32, or if it touch the server's partner, or anything that he wears or carries.

34. If a player serve out of his turn, the umpire, as soon as the mistake is discovered by himself or by one of the players, shall direct the player to serve who ought to have served ; but all strokes scored, and any fault served before such discovery, shall be reckoned. If a game shall have been completed before such discovery, then the service in the next alternate game shall be delivered by the partner of the player who served out of his turn ; and so on in regular rotation.

KNOTTY POINTS.

ADDENDA TO THE LAWS OF THE GAME.

(*Revised and approved by the Council of the Lawn Tennis Association.*)

1. In no case may the striker-out volley the service, not even if the ball is clearly outside the service court.

2. A player who is struck by, or strikes a ball *in play* (unless he thereby makes a good return) loses the stroke, no matter whether he is standing within the limits of the court or outside them. (For definition of "in play" see Law 15.)

3. If the service is delivered before the striker-out is ready, and he tries to return it, but fails, he loses the stroke.

4. If the striker-out cries "not ready" after the service has been delivered, but before the ball touches the ground, he may not claim a fault because the ball ultimately drops outside the service court.

5. If the server, in attempting to serve, misses the ball altogether, it does not count as a fault, but if the ball is touched, no matter how slightly, by the racket, a service is thereby delivered and the rules governing the service at once apply.

6. If a ball, served or returned, drops into the proper court and screws or is blown back over the net, the player whose turn it is to strike may reach over the net and play the ball, provided that neither he nor any part of his clothes or racket touch the net. If he fails to play the ball, the stroke of course scores to his opponent, notwithstanding that the ball has gone back over the net.

7. If a player throws his racket at the ball and so returns the ball into the proper court, he loses the stroke.

8. If a player catches the ball on his racket, walks with it to the net, and, reaching over, drops it into court, he loses the stroke, as such a proceeding cannot be defined as an "act of striking" (*vide* Law 15).

9. If a player's racket passes over the net after he has returned the ball, he does not lose the stroke, providing the ball has passed over the net before being played, and has been properly returned.

10. If a player or his racket touches the posts or supports of the net or posts while the ball is in-play, he loses the stroke. (For definition of "in-play" see Law 15.)

11. If a player's racket slips out of his hand and touches the net while the ball is in-play, he loses the stroke.

12. If a player, to avoid touching the net, jumps over it while the ball is in play, he loses the stroke.

13. If a ball is returned outside the posts, either above or below the level of the top of the net, and drops into court, it is a good return.

14. If a player succeeds in returning a ball served or in-play which strikes a ball lying in the court, it is a good return.

15. If a spectator impedes, or in any way interferes with, a player, a "let" may be allowed under Law 16.

16. A "let" does not annul a previous fault.

17. The service always commences from the right-hand court, even though odds are given or owed, and the service always continues alternately from the right and left courts.

18. If an umpire erroneously calls "fault" and at once corrects himself and cries "play," and the striker-out fails to return the ball, a "let" must be allowed.

19. If the ball in play (other than a service) strikes any part of the net or its supports, or the centre stay, no

matter how low down (provided it does not touch the ground), and eventually goes over into the proper court, it is a good return.

20. If in a double game the server's service strikes *either* of his opponents, he wins the stroke.

21. If a match is postponed on account of rain or darkness coming on, or for any similar reason, and is continued on the subsequent day, the match shall be resumed from the point where it was discontinued on the previous day. An entirely new commencement may only be made with the consent of the referee.

22. If two players in a handicap play at the wrong odds, the match stands, unless they have been wrongly instructed by the referee, or any person or persons acting under his instructions, in which case the loser may claim to have the match replayed, unless the mistake in the odds has been in his favour. Such claim must be made within a reasonable time.

23. A similar decision must be given if two players neglect to play advantage sets when one of the conditions of the event in which they are competing is that advantage sets should be played.

LAZOING—Though the "lazo" has been known from very early times both in Europe and Asia, yet it was, perhaps, never brought either to such general use or perfection in usage as it has been since the horses of Diego de Mendoza in South America, and those of Cortés and Alvarado in North America, spread over the prairies and pampas, multiplied in vast numbers and became wild

Probably more misconception exists as to the use and capabilities of the lazo than in regard to any other equally well-known implement in the whole field of sport. Though the dispeller of popular errors is as unpopular an individual as the proverbial peacemaker, it may not be without use to give a slight account of the lazo, its management and capabilities.

In the Argentine Republic, in Southern Brazil, and in the Republic of Uruguay, lazos are made of raw hide plaited in four strands. In Chile they are of raw hide, twisted into a three-strand rope. Their length, in all four countries, ranges from sixty to eighty, or, at the outside, ninety feet. In general they are about the thickness of the little finger of a man's hand. In Chile they are a little thicker, owing to the looser method of construction. In the above-mentioned countries (with the exception of Chile) at the extreme end of the lazo is spliced a ring of about two ounces in weight. At the end retained in the hand, is a button formed like a Turk's head knot, and a strap of raw hide serving as a button-hole. This button is fastened into a strong iron ring placed just behind the rider's thigh in the circingle, which forms the girth of the South American saddle, called "*recado*" in the Pampas and "*enjalma*" in Chile.

In the latter country no ring is used, but at both ends there is a button and strap. The length of the lazo determines the extent of the throw, and as an ordinary lazo is about sixty-six feet in length, it follows that eighteen, or, at the most, twenty yards, is the outside limit at which an animal can be caught by it, and that only when thrown from a horse galloping. On foot, twelve to fifteen yards is considered a good throw. To throw the lazo it is necessary to make a noose at one end of the rope, from two to five yards in circumference. The iron ring should be allowed to hang about five feet from the hand. Then, gathering the slack of the rope into small coils, the lazoer swings the lazo round his head several times, taking care that the noose in circling round his head keeps open, and lets it go when the right hand is just over the right ear. No strength is required in throwing when on horseback, and much less when on foot than a spectator might imagine.

When the lazo has settled over the horns of the animal (if a bullock) or round the neck (if a horse), care must be taken to keep the animal lazoed always on the off side of your horse. On no account should it be allowed to cross to the near side, nor should the lazo be allowed to touch the horse ridden, either in throwing or in "working" the lazoed animal. Neglect of this precaution has cost many a man his life, as even a tame horse when touched by the lazo, and still more when entangled in it, is apt to buck or throw himself down. The lazo should be kept taut, which is accomplished by keeping your horse always bearing to the near side. There is no danger of being pulled over, as the weight of the horse, plus the rider and saddle, exceeds that of any bullock to be found in prairies or pampas.

On foot, the lazo is used to catch the feet of animals or to catch animals in a corral. It can be used with great accuracy to catch the two fore feet of a running animal or to catch a fore or hind foot, or in many other ways.

Lazos in South America are kept soft and pliable by frequent greasing.

In Mexico and South America lazos are made either of horsehair or of the fibres of the aloe and other plants, and in Texas and California of hemp. In no case in these countries is a ring used. Mexicans generally use a button and strap, and Texans and Californians merely tie a bow-line on a bight, and pass the other end of the rope through the bight to form the noose. The lazo used in Mexico and North America seldom exceeds sixty feet in length and is often shorter. It is made fast to the high pommel of the Mexican saddle, and, being thus in front of the rider, can be thrown on the "near" as well as on the "off" side, or, if the lazoed animal crosses, the lazo can be shifted over the horse's head with little danger.

Mexicans and Texans are probably not so skilful on horseback as the South Americans, but more dexterous than they in the use of the lazo on foot. Technically speaking, the lazo is hardly a sport, as it is rarely used for amusement, but it is a difficult, a dangerous, and a

Le léopard

picturesque exercise, and to acquire its use in perfection a man must be a skilful horseman, possessed above all of good hands, and must have practised from his earliest youth.

In guerilla warfare the lazo is a useful weapon, and can be used, moreover, to drag a gun or wagon out of mud or through a river, for, by attaching the lazo to the gun carriage or wagon, four or five men can instantly add the strength of their horses to that of the team. The Spaniards say of the guitar that it requires no science, but only strength in the wrists and perseverance; and the same may be said of the lazo, if we add judgment, a cool head, a firm seat, and a horse that can turn upon a Mexican's "*poblano*" hat.

R. B. Cunninghame Graham.

LEOPARDS AND PANTHERS—DISTRIBUTION OF—In spite of the great difference in size between the animals popularly known as the Leopard and Panther, both are now generally included by zoologists in the single species *Felis pardus*, of which, however, there are several local races. This species is characterised by the ground-colour of the fur being generally some shade of yellow, and by the black rosettes having no black spot in the central area. Its range includes the greater part of Africa, Asia Minor, Persia, Baluchistan, India, Assam, Ceylon, Burma, the Malay Peninsula, Sumatra, Java, and China. Apparently the name **Panther** properly belongs to the African race (*F. pardus typicus*), in which the spots are generally small and a large number of them are solid. In the Albany district of South Africa occurs a dark variety in which there is often a distinct black stripe down the middle of the back, and the spots elsewhere are much broken up and very numerous. Whether this form indicates a distinct race, or only a dark variety, is uncertain. In India and the Malayan countries there are a large and small variety, the former generally known as the Panther, and the latter as the Leopard. Both have the spots larger than in the African race, and with a greater tendency to form rosettes; and both must be regarded as constituting a single race. To this race must likewise be referred the **Asiatic Black Leopard**, most frequently met with in elevated districts in Southern India and the Malay Peninsula. It is not a distinct race, but merely a black, or "melanistic" variety, the spots clearly showing in certain lights.

Much more distinct is the **Persian Leopard** (*F. pardus tulliana*), distinguished by its light colour, the large size of the spots, the length of the fur, and the great thickness of the tail. In all these respects this race forms a transition towards the Snow-Leopard. A fourth very distinct race is the **Chinese Leopard** (*F. pardus fontanieri*) from Northern China, a mounted specimen of which is now exhibited in the British Museum. This is a large, stoutly-built animal, characterised by the long light-coloured fur, the moderately thick tail, and the confluence of the spots to form large jet black rosettes, differing from those of the Jaguar mainly by the absence of the black centre. The muzzle, too, is shorter than in the Indian Leopard, and the entire animal has a massive appearance, very similar to that of the Manchurian Tiger, northern races of widely spread species very generally exhibiting the same peculiarity. This race is mainly known by flattened trade-skins, which are imported in considerable numbers from China; its exact geographical limits are unknown, but it certainly inhabits Manchuria, and not improbably, further south, gradually passes into the ordinary Indian race.

The **Ounce**, or **Snow-Leopard** (*Felis uncia*), although showing some resemblance to the Persian Leopard, is classed as a distinct species, characterised by the long thick fur, the white ground-colour, the large size of the spots, which, with the exception of those on the head, are somewhat ill-defined, and the great thickness and length of the tail, which scarcely tapers from root to tip, and is nearly three-quarters the total length of the head and body. Other distinctive features are afforded by the skull; the large yellowish spot on the otherwise black ears is also a characteristic mark of the species. The Snow-Leopard is an inhabitant of all the higher ranges of Central Asia, including the inner Himalaya, the Altai, and the Thian Shan. Its distributional area thus extends from Gilgit and Hunza through Baltistan, Zanskar, and Ladak to Turkestan, Tibet, Trans-Baikalia, Amurland, and North-Western China. How far its southern limits extend is not precisely known; but it certainly occurs in the Pangi district of the upper Chinab valley. Whereas in the greater part of the Himalaya it does not descend below 9,000 ft. above the sea level, and ranges up to 16,000 and 20,000, in Gilgit it has been found in winter as low as 6,000 ft., and further north it doubtless occurs at still lower elevations.

The third and fourth specific representatives of the Leopard group are the **Jaguar** (*F. onca*) and the **Puma** (*F. concolor*), both of which are American. Since each has a separate article, it will suffice to state that the former is distinguished from both the Asiatic species by the presence of a black centre to the rosettes, and that in the latter the spots have practically disappeared, although frequently visible in certain lights. The numerous species of Puma recently named by Dr. Merriam must be regarded merely as local races. The last member of the group is the **Clouded Leopard** (*F. nebulosa*), distinguished by the long tail and the broad black-bordered markings on the fur of the body. It occurs at elevations up to 7,000 ft. in the south-eastern Himalaya and Assam, and extends thence

to the hilly districts of Burma, Siam, the Malay Peninsula, Java and Borneo. In Formosa it is represented by a shorter-tailed race (*F. nebulosa brachyurus*). The **Hunting-Leopard**, or **Cheetah** (*q.v.*), has, of course, nothing to do with the true Leopard, but represents by itself the genus *Cynælurus*.

R. LYDEKKER.

LEOPARD, AFRICA (*Felis pardus*)—**Nomenclature**—The greatest possible confusion has long prevailed concerning the nomenclature of the various spotted cats—the panther, leopard, cheetah, puma, and jaguar, having from time to time been mixed up in the minds of writers upon the subject.

In North America the uniformly-coloured puma is often styled "panther," the term applied by Buffon to the jaguar of South America; in India "panther" is the name given to the large, and "leopard" to the smaller, variety of *Felis pardus*.

Sir J. E. Tennent tells us that in Ceylon the leopard is frequently called *cheetah*—the latter word, I believe, merely meaning "spotted." I think it quite likely that the term "leopard"—lion-panther—was originally applied to the cheetah by the ancients, the panther-like *tout ensemble*, combined with the maned neck of the cheetah, being sufficient to account for this application of the term.

In South Africa the Boers and many colonists still call the cheetah "luipard."

However, it is now generally admitted that there is but one true species of large spotted cats in Africa, viz., the leopard (the cheetah being of course placed in a different group). Notwithstanding the apparently wide difference in size, coloration, and habits between the large and small varieties, the frequent occurrence of forms intermediate between them establishes the identity of species.

The **Hill** or **Kloof Leopard** is common on the mountain ranges in all parts of Africa in which I have hunted, and amongst the Kloofs and Krantzes of the foot-hills, practically wherever it can obtain plenty of cover, water, and food.

It preys principally upon the small game which abound in such localities—bush-buck, bush-pig, drinkers, and klipspringers, and at a pinch even the little hyrax affords it a meal. Monkeys are occasionally caught, while, if there are any farms about on the terrace-lands, foals, donkeys, goats, sheep, and dogs are amongst the leopard's victims.

The average total length of the male hill leopard is 6 ft. 5 ins. or 6 ft. 6 ins. (though this length I have often seen much exceeded), the tail being usually about 2 ft. 10 ins., shoulder height 2 ft. 5 ins., girth of forearm, 12 to 13½ ins. His girth and muscular development are immense, the head somewhat long and narrow. The average length of the leopardess is 6 ft. 2—3 ins. The fur is long, the ground-colour usually a rich, dark orange buff, paling on flanks and inner portions of limbs; the chest and belly are pure white. Bases of ears black. The spots are dark brown or black, arranged in the form of open rosettes around a centre of ground colour darker than elsewhere.

These open rosettes occur only on the back, sides, and upper portions of hind limbs, those on the chest, forearm, flanks, belly and thighs being solid and of large size, while on the face, head, neck and lower limbs the spots are very small. The most typical forms of this variety can be recognised at once by the manner in which the spots on the back run into one another, forming more or less broken stripes, long, broad, and dark, continued down the tail, the tip of which is always black; both the rosettes and solid spots all over the body are very close-set.

The **Low Country Leopard** is at first sight a very different beast, higher on the legs, longer in body, less muscular, and of gaunt appearance. He inhabits the dense cover of reeds, grass, or thorn-thickets along the banks of the principal streams, and is often found in low stony hills, covered with brush, adjacent to water.

He has far wider choice in the matter of food and less trouble to secure it, as in the Low Country game, both big and small, is plentiful.

This fact accounts for the marked difference in outward appearance between him and his congener; the latter attains great muscular development from the necessity of constantly climbing hills, krantzes, kloofs, and even trees in pursuit of its prey; the former, on the contrary, takes life more easily, usually seizing its prey when it comes to the water, and is altogether a lazier animal.

Average length 6 ft. 10 ins. to 7 ft., the tail occupying 2 ft. 6 ins., shoulder height 2 ft. 7 ins. or 8 ins. Fur short, close and sleek; head short, round and heavy; limbs long, and less muscular than those of the hill leopard. Ground colour pale fulvous, but subject to much variation. In the typical animal the spots, though of a similar nature to those of the hill leopard, *never* run into bars or lines, but are always *widely set* one from another. In the intermediate forms, however, found commonly amongst the lowest foot-hills and throughout all the Low Country, so variable are the markings and measurements that in most cases it is impossible to determine to which variety any particular one belongs. All are, in fact, but modifications of one widely distributed type.

Tracking.—As an object of sport I consider the leopard has seldom had fair play. They are extremely difficult to find, but once this is accomplished, their pluck and savage nature

will fully reward the sportsman. Good dogs, I consider, are almost an absolute necessity, especially in the hill country. The best for use in this country is a cross between the rough "Boer-dog" and a greyhound. He will be plucky, strong, with good staying power, a keen nose, and will have a turn of speed. Very large dogs are quite useless, for they cannot get through the under-wood and dense thorny thickets which abound in the kloofs, and into which leopards invariably retreat. Dogs that show too eager a desire to run forward contrary to orders should be promptly checked, and if disobedient, should either be led by a boy or drafted out of one's "leopard-pack." Such dogs are apt to come to close quarters with the leopard too soon and unsupported, and may either get killed or permit the leopard to escape before the sportsman can get up.

In the summer months, *i.e.* during the rainy season, December to April, leopards are difficult to find, whether in the hills or on the plains, owing to the length of the grass and denseness of the vegetation; but during the dry season, more especially when the grass is burnt off, it only requires patience and perseverance to bring them to bag. In the hill country, wherever leopards are of frequent occurrence, they will often be met with in the early mornings, and until the sun is an hour or more up, on the edges of kloofs and forest tracks, and on the long open grassy spurs so common to the broken country at the foot of a mountain range.

They delight in sunning themselves on the rocks, and playing about in the cool dewy grass under the genial rays of the early sun. In the Low Country, also, the banks of rivers and small watercourses in the early morning are the most likely places in which to look for them.

Watching at Kills.—As a rule, however, leopards, like lions, are found by means of their "kills," a careful examination of which will soon tell the sportsman whether they are the work of a lion, leopard, hyæna, or cheetah. If the spoor can be made out, that will of course decide it at once;[1] otherwise the carcase itself must be examined. With the exception of the hyæna, all these animals drag their prey some distance from the spot where it was killed,—the hyæna *only drags portions*, when dismembered. The hyæna also eats meat, bones, skin, entrails, in fact everything indiscriminately: the other three disembowel their kill, and tear off large portions of skin with their teeth before eating. The cheetah disembowels in a rough, dirty fashion, *frequently eating some of the entrails, never* burying them; after devouring the viscera, he tackles the head, biting off the ears and nose, and lacerating the throat. The lion and leopard disembowel *neatly*, and bury the entrails; both then devour the viscera, but whereas the lion then sets to work upon the buttocks or inside of the hind legs, the leopard invariably tackles the breastbone, brisket, and soft ends of the rib-bones. The hill-leopard very seldom returns to its kill if once actually disturbed thereat, otherwise, provided the kill has not been unduly tampered with, it may be expected to return on the following night. The Low Country leopard, on the contrary—possibly because it fears man less, not having so frequently come in contact with him—displays the utmost audacity in returning again to its kill, no matter how much it may have been interfered with. In Central Africa the hill-leopards are equally bold and audacious; a good deal depends upon how much or how little reason they may have had to fear man.

In all cases, however, I advise the *utmost* caution and skill in dealing with these creatures, for they are beyond question the wariest brutes in the world. Supposing the leopard's kill has been found early in the morning, say any time before the dew is dry upon the grass; the sportsman then has two alternatives before him: he can either follow up the leopard at once with the help of his dogs, or he can set to work and construct a "*scherm*" (shelter of branches) from which to watch for the leopard at night on its return to the kill.

In the first event he should lose no time in getting his dogs together, and obtaining the assistance of two good native spoorers. I consider the latter invaluable, even though a man may have had so many years' experience amongst wild game as to have become as proficient in this branch of forest-craft as nine out of ten natives themselves.

The sportsman is too heavily handicapped if forced to keep his eyes constantly on the spoor; he requires to be free to keep a sharp look-out for the game, and to use his rifle instantly. Four good dogs such as I have described are better than a whole pack of doubtful ones; if they know their work they will lose no time in getting on the spoor, and with their aid and that of the natives, good progress can be made.

If the dew is on the grass, so much the better; it will then be easier to spoor the game across the open stretches of long grass and scrub.

When by the excited action of the dogs it becomes evident the game is near (usually, if his drinking place is found, it is safe to expect a leopard to lie up within a few hundred yards of it) three of them should be taken in hand and led, unless they are sufficiently trained to keep close up or go "to heel" when ordered. The steadiest dog still keeps the spoor, and the sportsman must now be all eyes, examining critically every heap of rocks, every ravine

[1] Both hyæna and cheetah leave the imprints of their nails on the ground, the former deeply, the latter slightly. A full-grown male leopard's spoor is 4 in. in diameter, front feet—hind feet 3¼ in. in diameter.

crossed, every thorn-thicket, and the lower limbs of the larger trees. If the approach has been—as it should be—silent and cautious, the leopard will jump up at close quarters, and the dogs must be instantly released. They will then quickly bring him to bay, or if he bolts, will follow him up and "tree him." It is well to provide each dog with a broad and somewhat tightly-fitting leather collar; it may save them from an ugly mauling.

Should the sportsman decide to watch by night (by moonlight, of course, from choice) he must study the prevailing wind, and also note carefully the direction taken by the leopard when leaving its kill, as from that direction it will surely return. These points noted, he can erect his screen—a 2½ feet breast-work of interlaced branches is sufficient—which should be about 20 to 25 feet distant from the kill; the latter must be handled as little as possible, and firmly lashed *by the neck* to a tree by means of a light chain or strong *riem*. It can, with advantage, be hung up about 5 feet from the ground, while another good plan, especially if the night is dark, and there seems but a poor chance of obtaining a shot, is to lash it to a log of wood about 8 feet in length and 4 inches in diameter. If the leopard seizes the kill, unseen by the watcher, he drags it away, log and all, but thereby leaves a spoor which can be followed *at earliest dawn*, when the animal can often be shot at the carcase. Under any circumstances, there is great risk of the leopard winding one, for as a rule, before approaching its kill, it makes a complete circuit round the spot, to test the wind. If, however, the watcher gets his chance he must keep cool, seize his *first* good opportunity, and *fire low*.

When the nature of the ground is such as to permit of the "scherm" being erected on *higher ground* than that where the kill lies, such as on the bank of a creek, top of an ant heap or a pile of rocks, then the sportsman's chances of success are at least doubled. Watching from any height in a tree is almost useless; it is difficult to see an animal on the ground, and besides, a leopard, unlike a lion, always *examines the trees* when approaching a kill, far more critically than he does objects on the ground.

A yet more certain plan, and in fact the only one to be adopted in case the leopard fails to revisit its kill on the first night, is to hang the latter well up in a tree, and then tether a goat on the spot, tying a piece of string to one ear, the other end of the string being led into the "scherm"; an occasional pull on this will cause the goat to bleat "to order"—a temptation few leopards can resist. On the leopard's approach, the goat tugs and strains at its tether, usually bleating loudly at first; then, standing stiffly at the end of the rope and staring hard in the direction from which the leopard is approaching, it becomes quite silent. The shot is best taken after the goat is seized, but sometimes a leopard gives a good chance when creeping in on its victim. On this account the ground should be cleared as much as possible round the bait; on no account should the latter be tethered less than 30 ft. distant from any heavy cover. Judgment and caution must be exercised from first to last; the branches for the "scherm" must be cut quite 100 yards from where the bait is to be placed, and in fact every endeavour must be made to retain the former natural appearance of the spot, even to artfully concealing the "scherm" by throwing branches loosely in front of it.

I have frequently used Brock's blue lights for shooting on dark nights, with fair measure of success, the plan adopted being to fasten one or more of the lights to a bush or tree, behind and above my right shoulder, pointing in the direction from which the game is expected. Thus placed, the light when struck shows up the rifle sights well, as also any object in front for a distance of 25 to 30 yards, so that if lit up when the leopard is eating at the carcase, there is ample time, if one is quick, to put a bullet in the brute's chest as he springs to his feet and stares at the unwonted glare. Of course, they do not always stand thus, frequently bolting precipitately, but one must take the chance of it.

Following a wounded leopard is most risky work, he will hide anywhere, for scarcely any cover is so small and insignificant but he will make himself invisible in it. Leopards seldom give any warning of their proximity in such a case, as does a lion, but will fly out at dogs or man with implacable fury and lightning speed; one must be smart with the rifle then or stand by for a mauling.

A smooth bore, loaded with AAA shot, should stop any leopard in its charge at close quarters, but I consider the use of such a weapon quite unsportsmanlike. A wounded leopard, unless closely pursued by dogs, never takes to a tree, but if not too badly hit, will travel a great distance before lying up. One should get quickly on the spoor, and even then, without dogs, there will be many checks, as the loosely set skin frequently covers up the bullet hole and prevents external bleeding.

The same general rules apply to hunting the Low Country leopard, but the latter are usually more difficult to spoor from a kill, not only because if found in fly country one seldom has any dogs in camp, but also owing to the nature of the ground traversed. A leopard scarcely leaves any trace of his passage either through long grass, reeds, or over the short stiff "wire-grass" and strong rubble of many of the Low Country ridges; whereas spoor is fairly easy to follow over the damp, soft soil of the kloofs. The Low Country leopard, however, seldom travels far from its kill, especially if water is

handy; and a systematic search through all the most likely and unlikely cover within a radius of 300 yards from the kill usually proves successful: in fact it is not at all an unusual thing to find this animal lying at his kill throughout the day.

Rifle and Ammunition—Any light, accurately-sighted double rifle with a slightly hollowed conical lead projectile of *not less* than 360 grains, will account for a leopard.

I have on most occasions used a Gibb's Metford. It is a perfect weapon for leopard shooting: but in kloofs and dense bush I often use a double 12 rifle, a wound from which leaves a good blood spoor. Owing to the weight of its projectile the shock to the animal is great, and prevents its going any great distance after being hit. The ·303 rifle should be a deadly weapon for leopards, if a reliable expanding bullet is used.

Aim should always be taken for the shoulder, if the animal is broadside on, and for the centre of the chest or the junction of neck and shoulder if facing or quarter face on.

Although I invariably use ivory bead foresights I do not consider them "quite the thing" for bush shooting. A small enamel bead-sight, which if necessary can be made to slip over the ordinary sight, is more opaque and therefore gives better results; for moonlight nights these enamel sights are excellent.

For work in dense and thorny bush, no material will be found to answer so well or to wear so long as gabardine, which is practically thorn proof. A close-fitting cloth cap is the best head-gear; a broad-brimmed felt hat or a helmet is knocked off too easily by the twigs.

FRED. V. KIRBY.

SOMALILAND — Leopards and panthers are so cunning, so stealthy in their habits, so easily concealed, and they live in such broken and intricate ground, that they can seldom be systematically hunted like other kinds of large game. Moreover, they live chiefly in stony hills, where tracking their light footsteps is next to impossible. Leopards are seen now and then by daylight when the sportsman is in pursuit of other game, but they generally disappear before a shot can be fired. They turn up at the most unexpected times and places, but are most often heard of in the hunting countries of North East Africa, in the neighbourhood of the grazing grounds of the flocks of the nomads, when the kraals are pitched at the foot of the rugged hills or on the edge of broken country intersected by ravines. In the afternoons, and about an hour before sunset, as the flocks are being driven homewards, the leopards sneak out from their rocky hiding places to strike down any lagging sheep or goat.

There are exceptions, however, and a kill may occur at any time when the flocks are about, and attacks by night are bold and frequent, the victims being dragged out through the thorn fences of the kraals.

If darkness is setting in when the kill occurs, by the time the news gets to the sportsman's camp it is too late to do anything. But if a kill takes place early in the afternoon, a not uncommon occurrence, there is time to erect a small screen of brushwood down wind and within a few yards of the carcase, behind which the sportsman can hide. The leopard will almost surely return to such a kill at sunset, and can be easily shot. In a case of this kind it is important not to touch the carcase or even approach it too closely, as the human taint hanging about would be quite enough to excite suspicion of a trap. The attacks of leopards are very varied in character. On one occasion the writer, when following a wounded antelope, found that a leopard had taken up the chase, leaving its tracks over those of the antelope; and when a little later the antelope was discovered lying dead, a leopard, which had been drinking its blood, bounded away. This occurring at about 4 p.m., the writer sat in the shade of a bush thirty yards from the carcase for an hour, at the end of which time the leopard returned boldly to the kill and was shot, being soon afterwards packed on a camel along with its victim and sent to camp.

On occasions leopards were shot by watching over a goat tied up as a living bait at night. A screen was erected if possible down wind, and a little above the bait, the latter being tied to a heavy log of wood; it is a mistake to tie it to a stake fixed in the ground, as unless the leopard can drag his kill a little way he will suspect a trap and bound off. The best time to shoot is when the leopard is lying on the victim drinking its blood, or is dragging it slowly along. A half-grown kid, which will bleat loudly, is the best.

The writer found it a good plan to take post just as the men were finishing work on the screen. They had instructions when going away to make plenty of noise, talking loudly, so as to give the impression that no one remained behind. On one occasion when this ruse was practised, the men having only just walked away, and while they were still only two hundred yards distant, the leopard walked boldly up, and was shot by the writer, who had remained in ambush.

On another occasion he sat behind a screen of brush-wood, watching a pool of water before sunset, at a time when most of the other streams and pools in the neighbourhood were dry. The animal came to drink while it was still twilight, and was shot, stumbling away to die in a ravine close by, where he was found half-an-hour later by the aid of a lantern.

Leopards are very bold and enterprising when

they have made up their minds to attack, and it is well known that in civilised neighbourhoods they will enter houses; and many a time has the writer's camp been attacked and a goat killed within the thorn fence, in spite of the presence of an armed sentry. On one occasion the brute was seen to creep under the outer fly of a "Cabul" tent within a few yards of where the writer was standing, and springing over a circle of sleeping men, seize a goat which had been tethered close to the camp fire. An approach was made on another night along the branch of a tree overhanging camp, followed by a perpendicular drop on the goat, which, however, it had no time to kill before it was driven away.

The leopard will charge against any odds when wounded. Once when following one by the light of a faint moon, accompanied by a dozen natives armed with rifles, the writer was charged by a leopard, which sprang on the next man to him. This man held down his assailant by the throat till it could be shot. This animal had first attracted attention two evenings before by prowling round camp, emitting at intervals the peculiar rasping growl, something like the sound of sawing of wood, which is so often heard echoing through the hills, even in the day-time, where leopards are common. It can be heard at a great distance. In this case, a goat was tied up on the first night, but on springing, the leopard caught sight of the ambushed sportsman, promptly let go the hold on the goat's neck, and bounded away. The same tactics were resorted to on the second night, but the writer, forewarned, fired a snap-shot at the beast while in its spring and disembowelled it. It crawled, however, into a bushy hill and died fighting, as above described. Moonlight tracking is not recommended, where dangerous game is concerned; the lights and shadows are uncertain, and accurate aim is difficult; in the case related it was only resorted to in order to prevent the valuable skin from being spoilt by hyænas.

Examples are numerous in the experience of most sportsmen of leopards turning up at unexpected times and places. The writer once came upon one lying on its side asleep at three on a hot afternoon in full view, on the open level sand of a river-bed, where a recent freshet had left the surface damp, and a high overhanging bank cast a cool shadow. Sometimes they were sighted for a moment in forest country, to bound away without giving a shot, and once a leopard was found asleep in the shade cast by the body of a dead elephant, just as a party with axes arrived to cut out the ivory. On another occasion a shot at one of a herd of gazelles was spoilt by the charge of three leopards, which scattered them. Once when the sportsman's caravan was on the march, the man driving the milch goats happening to lag behind, the head of a leopard, which had evidently been following, was seen over a bush, and on finding itself observed it sprang away.

When a leopard or panther has carried off a goat and can be traced to one of the boulder-strewn hills in which they live, there are two ways of bringing it to bag.

One plan is to follow the tracks, if possible, or the trail where the carcase has been dragged along, till the leopard's cave is discovered. Very likely the remains of the meat will be found at the cave mouth. Then choose a convenient spot not far away at the foot of the hill, erect a zeriba or utilise a bush as a screen, and watch over a live goat for half an hour before sunset. It is not worth while waiting long after sunset, as by that time any leopard about will probably have gone further afield to prowl round the kraals.

Another way is for the sportsman, having found the cave, to post himself early in the afternoon on a pinnacle of rock above it and watch on the chance of catching a glimpse of the animal when he comes out for his afternoon ramble, after the sleep he will probably have taken during the heat of the day. Several men may be posted on the tops of the largest boulders in spots commanding the whole of the broken ground, so that if he is on the move he will probably be seen; and when seen his progress can be followed by signals passed along by the men; then with judgment and good wind on the part of the sportsman a shot may be obtained. It involves a good deal of jumping from rock to rock where a fall would be disastrous, and rubber tennis shoes are the best in dry weather.

Somalis sometimes kill leopards, as well as hyænas, at the wells, by leaving poison in the rough clay troughs which still contain a little muddy liquid after the flocks have been watered. Wild animals, being unable to climb down to drink from the deeper wells, seem often to depend on these troughs, which are situated at the surface of the ground.

The range of the leopard, in North-east Africa at any rate, is not confined to any locality; it is most common in Somaliland, in the Golis Mountains, and their continuations east and west. It is rather rare on the flat stoneless interior plateau, and possibly altogether absent on the open treeless grass prairies. It is common everywhere where broken ground, intersected by ravines, is combined with the presence of goat and sheep kraals. It is seldom seen in the Maritime plain, though common in the interior plains behind the low Maritime ranges. It is, as before pointed out, so unexpectedly found that the only methods of hunting it, promising substantial probability of success, are by watching over water, over a kill, or over a living bait.

When driven by a line of beaters it is said often to escape observation by crouching or taking to the branches of a tree till they have

passed; and it must be remembered that a platform in a tree is little protection against such a good climber, and in India many a sportsman has been pulled out of a tree.

When it offers a good chance, a leopard, being a small and thin-skinned animal, can be killed with comparative ease, and a double ·450 express rifle should be a good weapon; some writers recommend a double 12 bore gun, with S.S.G. shot, for use at close quarters. Being savage, vindictive, and fearless above almost any other game animal, they require straight and quick shooting. There are many occasions on record where a good knife, or a double ·577 pistol, would have been useful carried in the belt, for in a charge the rifle may be knocked out of the sportsman's hand, and a leopard is not too powerful an animal to be met in this way as a last resort.

The Somalis call all leopards "*shabel*," but they affect to believe in the existence of a large kind, rare and inhabiting the highest hills, possessing supernatural powers, and the ability to change itself into a human being at will. This animal, if we strip it from exaggeration and superstition, is probably the larger heavily built leopard, which would be called a panther in India. These fine hill specimens sometimes take to man-eating, and when they do they are most destructive, one upon the Golis range in Somaliland having been credited, by native report, with a hundred human victims.

It appears not to be very clear among naturalists what the difference between a panther and leopard really is, the chief points being the size and build and the formation of the spots; but the writer is unable to throw any special light on this subject.

H. G. C. Swayne.

INDIA—It is proposed under this name to treat of the animal (*Felis pardus*) called by sportsmen in India panther, leopard, and cheetah. The Hindoostani name is "*Tendwa*," but it is frequently called cheetah by the natives, though this latter name is more appropriately applied to the hunting leopard (*Felis jubata*), a totally different animal. There can be no doubt that there exist two varieties of the leopard in India, one much larger than the other; indeed, some zoologists hold that they are distinct species, but Jerdon considers them to be varieties only, and not distinct species. This seems the better opinion. Jerdon uses the term "panther" for the larger, and "leopard" for the smaller variety. The chief distinction between the two is in size, the leopard rarely, if ever, exceeding 6 feet in length from the nose to tip of the tail, while the panther measures from 6 feet to nearly 8 feet, more usually a few inches under or over 7 feet. The other points of difference are: (1) in the panther, the ground colour of the skin is of a light yellow, while the leopard is much darker, and the spots on the latter are closer together and smaller than those on the panther; (2) the skull of the leopard is rounder than that of the panther, and is said to want the bony ridge running along the occiput which characterises the panther's skull. This last observation, however, is, in the writer's opinion, not correct; the bony ridge referred to is found in all *old* animals of either variety, and is wanting in young specimens of both. The older the animal, the more developed is the bony ridge, and the surest sign of age in any of the cat tribe is the size of this bony ridge. Most authors also state that the panther is more slender in figure than the leopard, but this also is not in accordance with the experience of the writer. The habits of the two varieties are similar, though, as might be expected, the larger animal is able to kill a larger prey. Both varieties in the remainder of this article are included in the term panther.

The panther, then, is found throughout India wherever there is jungle of any extent, and it is particularly partial to rocky hills, its favourite haunts being in the cavities among the rocks, where it lies up during the day, issuing forth at evening in search of food. At night time it does not seem to mind the vicinity of man, and prowls close round the villages in search of any stray dog or goat. Panthers feed on cattle, goats, dogs, deer, pigs, monkeys, hares, peacocks, and any smaller bird or animal that they can get hold of. They are very fond of dogs, and many a good dog has been carried off by them. When sportsmen are tying out for tigers, panthers frequently take the bait intended for the larger animal. Many instances have occurred of a panther carrying the animal it has killed up into a tree and concealing it in the branches. They occasionally go up into trees to sit during the day, but this is exceptional, as they usually prefer to remain on the ground. In one well authenticated instance a panther was seen ascending a tree in the course of a beat to look about him; and it is well known that they have, when wounded, gone up the tree and pulled down their assailant sitting in it. Sometimes in a beat it is believed that panthers ascend a tree and remain there hidden until the beat has passed. They have also been observed treed by wild dogs. When wounded and followed on foot, they are, if their wound disinclines them to travel, almost certain to charge; they are very courageous under these circumstances, and will go at one man after another with astonishing rapidity.

The panther has a wonderful knack of concealing himself. The smallest depression of the ground and the shortest of grass suffice to render him invisible. Conspicuous as he is when walking, the moment he has crouched in the yellow grass and flickering shade it is impossible to see him before he makes his charge.

Of course, if he does not intend to charge, as he moves to go away you can shoot him easily enough. The wounds inflicted by the panther, though not so deep as those made by the larger *Felidæ*, are frequently fatal, blood-poisoning being a common sequel.

The usual mode of shooting is by driving them towards the gun by a number of beaters, but it is often impossible to induce the panther to leave his hole in the rocks, where he sits listening to the din. If there are no rocks, he is lying under a bush or in the grass in the shade of a tree; nevertheless, he sometimes manages in some wonderful way to slip away unseen, or what is not unlikely, sits close and lets the beat pass him by. Another way is to tie up a goat near the rocks where the panther is supposed to be. The goat bleats for his comrades, and the panther is attracted and comes out. From 3 P.M. to sunset is the best time. Or a goat can be tied just outside a village, where the tracks of a panther are seen, and about sunset, or shortly after, the panther may come. Another method is to sit over the carcase of a kill, and wait for the panther's return to it. Panthers are also occasionally seen and shot when out stalking, but it is not possible to track them up. It is mere chance, walking them up, and rarely occurs. They bring forth their young usually in April and May, and as a rule produce two cubs, which accompany the mother until nearly full grown. Man-eating panthers are not so common as man-eating tigers, but when they take to the habit they become a terrible scourge, entering the villages at night and seizing man, woman, or child as they lie asleep. One male panther, in the writer's own experience, in the Hyderabad districts, killed in less than a fortnight two women, two men and one boy, and had killed several others before. In every case the victim was seized by the throat when asleep. The panther's career ended in a trap; he was of the large variety, and in full vigour. It also transpired that he was accompanied by a female, whose tracks, however, had not on any previous occasion been observed. On the night of his capture, the female seized a man at the same village, who succumbed afterwards to his wounds, though they were of a trifling character. In the twelve months afterwards she only killed two persons, so there can be no doubt that the male was the chief offender. There are two ways of trapping panthers; one by a box-like cage with a falling door, in one end of which a goat is placed for bait, and in this the panther is taken alive. In the other mode, a heavy triangular framework of wood, loaded with stones, is supported by an arrangement something like a "figure-of-four" trap. The ground beneath is excavated a few inches to the shape of the triangular frame, which fits into the excavation when it falls. In the centre a small hole is dug, in which a kid is placed with its legs tied; this is covered with a dry palm leaf; a string attached to the trigger which lets the erection fall is fastened inside the hole, and when the panther comes, he scrapes with his paw at the palm leaf, so as to get at the kid, and pulls the string, when the whole weight of the frame and stones descends and crushes him to the ground. If not killed by the fall, he is easily despatched, as he cannot move. The man-eater referred to was caught in a trap of this description placed in a shed in the middle of the village, and close to a hut from which he had taken a girl a week previously.

The track of the adult male is squarer and rounder than that of the female, the impression left by the foot of the latter being oval in shape. Black panthers are rare, and at one time it was supposed that they were a distinct variety, but the evidence rather points to their being the offspring of the ordinary panther. Sanderson mentions that a black female in the Zoological Society's Garden at Amsterdam had two cubs, one black and one of the ordinary colour, but nothing was known of the male parent. The converse case of an ordinary female with one black cub among others of ordinary hue has been seen, it is believed, in India, though chapter and verse for this statement cannot be given. There is a good specimen of the black panther stuffed at the Natural History Museum at South Kensington, the colour of which, however, appears to be turning rather rustier than it used to be. The Indian panther appears to be identical with the African leopard. The writer saw in Somaliland one of the smaller variety, and a skin of the larger variety, both undistinguishable from the Indian leopard.

J. D. INVERARITY.

LEOPARD SPEARING.— Spearing the common leopard (*Felis pardus*) is a sport to which some Rajahs are partial. The leopard is caught in the forest in a cage-like structure made of natural boughs, with an inner compartment baited with a live goat; and, being transferred to a smaller cage, is taken without delay, so that it may lose none of its courage or activity, to an open plain. It is there loosed with ample law, in the presence of sportsmen mounted, armed with boar spears. If it makes for the forest, it affords a spirited chase before it is speared; and if it crouches, awaiting the attack, it ordinarily makes good its spring on the first assailant, so that it is not speared without some danger to horse and man.

END OF VOL. I.

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